Content

Timetable ............................................................................................. 2
General conference information .......................................................... 3
Supporters and sponsors ....................................................................... 3
Welcome to the METEC and 2nd ESTAD 2015 in Düsseldorf ............... 4
METEC and 2nd ESTAD 2015 Chairman’s address .............................. 5
Opening session METEC & 2nd ESTAD 2015 .................................... 6
Plenary sessions METEC & 2nd ESTAD 2015 ..................................... 6

ESTAD technical topic sessions

Ironmaking ............................................................................................... 7
Steelmaking ............................................................................................. 25
Rolling ......................................................................................................... 43

Steel Materials and their Application, Surface Technologies ............... 55
Environmental and Energy Aspects ...................................................... 67

Closing session METEC & 2nd ESTAD 2015 ........................................ 75
Works visits ............................................................................................. 76
Evening event/Conference dinner .......................................................... 81
Seminar:
Valorisation and dissemination of EAF technology – VALEAF .......... 82
Map of the trade fairs ............................................................................. 83
Layout of CCD South/Ground Floor .................................................... 84
Layout of CCD South/First Floor ......................................................... 85
Layout of CCD South/Second Floor .................................................... 86
Registration fees .................................................................................... 87
Registration ............................................................................................ 88
How to get to CCD South ...................................................................... 88

Timetable

15 – 19 June 2015

Monday, 15 June
Early Congress registration
Get-together
17:00 – 20:00
18:00 – 21:00

Tuesday, 16 June
Opening/Plenary sessions
Technical sessions
Evening event
10:00 – 12:50
14:00 – 18:40
18:30 – 23:00

Wednesday, 17 June
Technical sessions
9:00 – 18:00

Thursday, 18 June
Technical sessions
CLOSING SESSION
18:30 – 23:00
Closing session
15:30 – 17:00

Friday, 19 June
Plant visits
7:30 – 18:30

Congress secretariat / Organization
TEMA Technologie Marketing AG | Mr. Carsten Scheele
Aachener-und-Münchener-Allee 9 | 52074 Aachen | Germany
Phone: +49 241 88970-300 | Fax: +49 241 88970-999
Email: metec@tema.de | www.tema.de

Conference office / Registration
Monday, 15 June
17:00 – 20:00
Tuesday, 16 June
8:00 – 18:30
Wednesday, 17 June
8:00 – 18:30
Thursday, 18 June
8:00 – 18:00

(as of 1 June 2015)
General conference information

About METEC and 2nd ESTAD
Only those who continue to develop their businesses remain competitive. The prerequisite for this development means being constantly informed about the latest and most sophisticated technological advances, exchanging ideas and initiating and expanding networks with clients, partners and suppliers. The 2nd European Steel Technology and Application Days (ESTAD) 2015 run in parallel with the METEC Trade Fair.

The Steel Institute VDEh and its partners offer visitors the perfect opportunity to reach their objectives. At this event participants will acquire the latest information on new ideas and developments as well as on the state-of-the-art in metallurgical process technologies for iron and steel production, steel materials and steel application.

Get-together
On Monday evening 15 June 2015 the participants of the conference have the opportunity to meet each other in a relaxed atmosphere in the reception next to the Conference rooms and Conference office in the CCD South in Düsseldorf. There will also be entertainment and a finger buffet. Accompanying persons are also welcome.

Evening event
All conference participants and their companions have the opportunity to participate in the evening event on Tuesday, 16 June, 2015. The dinner will take place on the boat MS RheinEnergie. This extraordinary location offers a panorama view of Düsseldorf from the river Rhine. An ideal environment for fostering existing contacts and establishing new ones. The conference participants can reach MS RheinEnergie with a short walk from CCD South.

Language
The conference language is English.

Cooperation
The conference is organised in close cooperation with the Austrian Society for Metallurgy and Materials (ASMET), Fédération Française de l’Acier (FFA)*, the Swedisch Steel Producers Association (Jernkontoret) and Associazione Italiana di Metallurgia (AIM).
* FFA will be merged soon into the alliance of mining, minerals and metals (A3M)

Instruction on Antitrust Compliance
No illegal antitrust topics shall be dealt within the context of the METEC & 2nd ESTAD sessions and meetings, especially no agreements on prices or quantities shall be concluded.

Supporters and sponsors
We thank all international institutes and societies for their support of the METEC and 2nd ESTAD.

We thank the following companies for their platinum sponsorship:
Welcome to the METEC and 2\textsuperscript{nd} ESTAD 2015 in Düsseldorf

Dear Madam / Sir,

The 9\textsuperscript{th} International major trade fair for metallurgical plant supplier and manufacturing companies METEC 2015 takes place in Düsseldorf from 16 to 20 June 2015. This outstanding event started in 1979 and always takes place in Düsseldorf. Since the first METEC, in close cooperation with Messe Düsseldorf, the Steel Institute VDEh organized the accompanying metallurgical steel congresses and conferences. As an international industry gathering, the METEC is the exhibition event for the metallurgical technology of tomorrow.

The Steel Institute VDEh in 2013 proposed a new event located in Europe called European Steel Technology and Application Days (ESTAD), which is open for steel producers, steel users, plant suppliers, research institutes, as well as universities from around the world. ESTAD is carried through in joint cooperation between The Austrian Society for Metallurgy and Materials (ASMET), Austria, Fédération Francaise de l´Acier (FFA), France, Jernkontoret, Sweden, Associazione Italiana di Metallurgia (AIM), Italy and Steel Institute VDEh, Germany. The 1\textsuperscript{st} ESTAD took place in Paris, France, in April 2014. This year we want to move forward with this outstanding new event.

The 2\textsuperscript{nd} ESTAD will be held parallel to the METEC 2015 starting with a get together in the evening of 15 June and ending with plant visits on 19 June. Between these dates participants have the opportunity to get informed by a large number of presentations about the latest technical developments in the world of steel.

In this context, it is possible to meet experts for exchanging experiences and ideas on the newest developments. The Steel Institute VDEh invites experts from all over the world to join METEC and 2\textsuperscript{nd} ESTAD 2015 in Düsseldorf.

Hans Jürgen Kerkhoff  
Chairman Steel Institute VDEh

Dr. Peter Dahlmann  
Executive Member of the Managing Board Steel Institute VDEh

President German Steel Federation
Dear Madam/Sir,

From 15 to 19 June 2015 the Steel Institute VDEh carries through the 2nd ESTAD 2015 as the accompanying conference to the metallurgical trade fair METEC. ESTAD stands for “European Steel Technology and Application Days”, a new event located in Europe with worldwide participation. The 2nd ESTAD 2015 offers visitors the opportunity to get informed about the most important current developments in the world of steel, from raw materials to steel materials and their applications. Approximately 600 technical presentations in 135 technical sessions within 3 days from 16 to 18 June 2015 are given in the fields.

- Ironmaking
- Steelmaking
- Rolling
- Steel Materials and their Application, Surface Technologies
- Environmental and Energy Aspects

...to inform on and discuss the latest state-of-the-art steel technology.

Today, the steel industry is facing different challenges. On the one side EU policies request drastically reduced CO₂ emission levels not achievable for steel production with existing technologies, on the other side steel has to compete with other materials being on the market or under development. Steel has to be a step ahead and continuously needs to move forward. The METEC and 2nd ESTAD will give answers to many questions and contribute to the further success of steel.

I thank all the speakers and their co-authors at METEC and 2nd ESTAD for their efforts which highly contribute to the success of this event.

Dr. Herbert Eichelkraut
Member of the Executive Board, ThyssenKrupp Steel Europe AG, Duisburg, Germany
Chairman of METEC and 2nd ESTAD 2015
## Tuesday, 16 June 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td><strong>Opening by the ESTAD</strong>&lt;br&gt;Chairman: Dr. Herbert Eichelkraut, Member of the Executive Board, ThyssenKrupp Steel Europe AG, Duisburg, Germany</td>
</tr>
<tr>
<td>10:10</td>
<td><strong>Greetings, Garrelt Duin</strong>, Ministry of Economic Affairs, Energy and Industry of the State of North Rhine-Westphalia, Germany</td>
</tr>
<tr>
<td>10:30</td>
<td><strong>The German steel industry – regional strength, global challenges</strong>, Hans Jürgen Kerkhoff, Chairman Steel Institute VDEh, President German Steel Federation, Düsseldorf, Germany</td>
</tr>
<tr>
<td>10:45</td>
<td><strong>Future of the steel industry in Europe</strong>, Carl De Maré, ArcelorMittal for Emerging Technology Deployment, France</td>
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<tr>
<td></td>
<td><strong>Plenary session 1 – Newest Developments in Processes and Plants for the Production of Steel</strong>&lt;br&gt;Chairman: P. Dahlmann, Steel Institute VDEh, Germany</td>
</tr>
<tr>
<td>11:30</td>
<td><strong>Economical and flexible – taylor made solutions for the production of new steel grades</strong>, Burkhard Dahmen, Spokesman of Managing Board of SMS Holding GmbH, Germany</td>
</tr>
<tr>
<td>11:50</td>
<td><strong>Technology, service and integrated solutions – answering today's challenges in ironmaking</strong>, Georges Rassel, CEO, Paul Wurth S.A., Luxembourg</td>
</tr>
<tr>
<td>12:10</td>
<td><strong>Creating the future of metals as one</strong>, Andreas Flick, CTO Up, Primetals Technologies Austria GmbH, Linz, Austria</td>
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<td>12:30</td>
<td><strong>Tenova – passion for technology</strong>, Andrea Rocca, Managing Director Metals, Tenova, Milan, Italy</td>
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<td><strong>Plenary session 2 – Steel Materials and their Application</strong>&lt;br&gt;Chairman: F. Androsch, voestalpine Stahl GmbH, Austria</td>
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<tr>
<td>11:30</td>
<td><strong>New methods in steel design</strong>, Prof. Dr. Wolfgang Bleck, Head of Department of Ferrous Metallurgy, RWTH Aachen University, Germany</td>
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<tr>
<td>11:50</td>
<td><strong>Steel in high temperature power plant</strong>, Dr. David Allen, Consultant, IMPACT Power Tech, United Kingdom</td>
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<tr>
<td>12:10</td>
<td><strong>Steel application in construction</strong>, Prof. Dr. Dieter Ungermann, Head of the Chair of Steel Construction, Faculty of Architecture and Civic Engineering, TU Dortmund, Germany</td>
</tr>
<tr>
<td>12:30</td>
<td><strong>Steel in automotive industry – the view from the supply chain</strong>, Dr. Hosen Sulaiman, Manager Metal Forming, Advanced Manufacturing Engineering Metal, Faurecia Autositze GmbH, Stadthagen, Germany</td>
</tr>
</tbody>
</table>
• Raw Materials incl. Benefication
• Cokemaking
• Sintering and Pelletising
• Blast Furnace Ironmaking
• Direct Reduction and Smelting Reduction
### Program Overview | Ironmaking

#### Tuesday: 16 June

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
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<tbody>
<tr>
<td>09:00</td>
<td>Opening of METEC and 2nd ESTAD 2015</td>
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<tr>
<td>10:00</td>
<td>Plenary Session 1: Newest Develop. in Processes and Plants for the Production of Steel</td>
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<tr>
<td>11:00</td>
<td>Plenary Session 2: Steel Materials and their Application</td>
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<tr>
<td>14:30</td>
<td>Session 1: Cokemaking – Fundamentals 1 (p. 10)</td>
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<tr>
<td>15:00</td>
<td>Session 4: Cokemaking – Fundamentals 2 (p. 11)</td>
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<td>18:00</td>
<td>甚至晚活动 MS RheinEnergie</td>
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#### Wednesday: 17 June

<table>
<thead>
<tr>
<th>Time</th>
<th>Track A / Room 26</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Session 7: Cokemaking – Coal blending practices and handling (p. 12)</td>
</tr>
<tr>
<td>10:00</td>
<td>Coffee break</td>
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<tr>
<td>11:00</td>
<td>Session 12: Cokemaking – Latest Developments in Slot Oven Plant Technology and Design (p. 14)</td>
</tr>
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<td>12:00</td>
<td>Lunch</td>
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<tr>
<td>13:00</td>
<td>Session 18: Cokemaking – Blast Furnace Refractories and Cooling 1 (p. 15)</td>
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<td>14:00</td>
<td>Lunch</td>
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<tr>
<td>15:00</td>
<td>Session 19: Blast Furnace Ironmaking – Blast Furnace Refractories and Cooling 2 (p. 17)</td>
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<td>16:00</td>
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<th>Time</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Session 8: Blast Furnace Ironmaking – Fundamentals 2 (p. 13)</td>
</tr>
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<td>10:00</td>
<td>Coffee break</td>
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<tr>
<td>11:00</td>
<td>Session 13: Blast Furnace Ironmaking – Blast Furnace Relinings (p. 15)</td>
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<td>12:00</td>
<td>Lunch</td>
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<tr>
<td>13:00</td>
<td>Session 15: Blast Furnace Ironmaking – Blast Furnace Refractories and Cooling 1 (p. 15)</td>
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<td>14:00</td>
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<td>15:00</td>
<td>Session 19: Blast Furnace Ironmaking – Blast Furnace Refractories and Cooling 2 (p. 17)</td>
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<th>Time</th>
<th>Track C / Room 28</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Session 9: Direct Reduction and Smelting Reduction – Fundamentals 1 (p. 13)</td>
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<td>10:00</td>
<td>Coffee break</td>
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<tr>
<td>11:00</td>
<td>Session 11: Direct Reduction and Smelting Reduction – Fundamentals 2 (p. 14)</td>
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<td>12:00</td>
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<tr>
<td>13:00</td>
<td>Session 16: Blast Furnace Ironmaking – Modern Process Control Techniques 1 (p. 16)</td>
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<td>15:00</td>
<td>Session 20: Blast Furnace Ironmaking – Modern Process Control Techniques 2 (p. 18)</td>
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<th>Time</th>
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<tr>
<td>09:00</td>
<td>Session 10: Sintering and Pelletizing – Fundamentals 1 (p. 14)</td>
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<td>11:00</td>
<td>Session 14: Sintering and Pelletizing – Fundamentals 2 (p. 15)</td>
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<td>13:00</td>
<td>Session 17: Sintering and Pelletizing – Fundamentals 3 (p. 16)</td>
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<td>Coffee break</td>
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<tr>
<td>15:00</td>
<td>Session 21: Sintering and Pelletizing – Sinter Plant: Waste Gas Recycling and Waste Gas Cleaning (p. 18)</td>
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<td>16:00</td>
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### Thursday: 18 June

<table>
<thead>
<tr>
<th>Track A / Room 26</th>
<th>Track B / Room 27</th>
<th>Track C / Room 28</th>
<th>Track D / Room 16</th>
<th>Track E / Room 17</th>
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<tbody>
<tr>
<td><strong>Session 22</strong></td>
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<td><strong>Session 24</strong></td>
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<td><strong>Session 32</strong></td>
<td><strong>Session 31 + 40</strong></td>
<td><strong>Session 28</strong></td>
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<td><strong>Session 33 + 39</strong></td>
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<td><strong>Session 34</strong></td>
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<tr>
<td>Cokemaking – Coke Quenching Technologies (p. 24)</td>
<td>Blast Furnace Ironmaking – Hot Blast Stoves (p. 23)</td>
<td>DR/SR – Production and Use of DRI and HBI (p. 23)</td>
<td>BF – Coke Quality Requirements and Reduced Coke Rates (p. 23)</td>
<td>Sintering and Pelletizing – Pelletizing (p. 24)</td>
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<tr>
<td><strong>Session 37</strong></td>
<td><strong>Session 35</strong></td>
<td><strong>Session 38</strong></td>
<td><strong>Session 36</strong></td>
<td><strong>Session 37</strong></td>
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<tr>
<td>Closing Session:</td>
<td>Future technology trends and demands for iron and steelmaking processes and steel materials grades</td>
<td>DR/SR – Smelting Reduction Processes (p. 24)</td>
<td>Sintering and Pelletizing – Pelletizing (p. 24)</td>
<td>17:00</td>
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The complete program on your mobile, just scan
Tuesday, 16 June 2015
14:30-15:50 | Track A | Session 1
Cokemaking – Fundamentals 1
Chairman: J. P. Gaillot, Centre de Pyrolyse de Marienau (CPM), France

14:30 Criteria to evaluate cokemaking strategy for an integrated steel plant, Y. Gordon, R. Brown, J. Busser, I. Cameron, M. Sukhram Hatch, Canada
15:10 Models of coke formation for interpretation of dilatometer and sole heated oven tests, D. Jenkins, CSIRO, M. R. Mahoney, University of Newcastle, Australia
15:30 Examination of coke formation through microstructure analysis of sole-heated oven tests, M. Mahoney, R. Roest, H. Lomas, R. Fetscher, University of Newcastle, NSW, D. R. Jenkins, R. Pearce, S. Mayo, CSIRO, K. Steel, University of Queensland, Australia

Tuesday, 16 June 2015
14:30-16:10 | Track C | Session 3
Blast Furnace Ironmaking – Blast Furnace Campaign Life Extensions 1
Chairman: J. Hunger, ArcelorMittal Eisenhüttenstadt GmbH, Germany

14:30 BF-hearth life time extension with existing heat resistances in the hearth lining, R. Hebel, S. Roith, Paul Wurth Refractory & Engineering GmbH, W. Hartig, R. Lin, H. Rausch, ROGESa, Germany
14:50 The CSN’s blast furnace 3 titanium injection system, R. S. Nadur Motta, CSN, L. de Carvalho Vidal, L. E. de Souza, UNIFEI, R. F. Lima, R. S. N. Motta, S. J. X. Noblat, CSN, Brazil, S. Stein, Stein Injection Technology, Germany
15:10 Economical effects of the metallurgical use of synthetic TiO₂ Products in order to prolong the campaign of blast furnace, W. Hartig, ROGESa, D. Amirzadeh-Asl, Sachtleben Chemie Duisburg, D. Fünders, GSR, Germany
15:30  **Port Talbot Blast furnace no. 4, a 20 year hearth campaign with limited pad refractory and compromised base plate**, T. Janssen, J. Raleigh, J. Szafnauer, I. Vaughan, Tata Steel Strip Products UK, United Kingdom


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**Tuesday, 16 June 2015**

**16:00-17:20 | Track A | Session 4**

**Cokemaking – Fundamentals 2**

*Chairman: H. Kuyumcu, Technische Universität Berlin, Germany*

16:00  **Evaluation of coke strength**, P. Bennett, A. Reifenstein, ALS Coal, F. Shi, University of Queensland, Australia

16:20  **Laboratory method for coking pressure determination**, B. Mertas, M. Sciazko, A. Sobolewski, Institute for Chemical Processing of Coal, Poland

16:40  **Maximization of clean coal ash of Indian medium coking coal in stamp charged coke making at Tata Steel**, H. Tiwari, S. K. Haldar, R. Sharma, P. Mishra, A. Das, Tata Steel Ltd., India

17:00  **Determining fusibility of inertinite by comparison of matched coal and coke surfaces using imaging analysis methods**, K. Warren, G. O’Brien, G. Krahenbuhl, P. Hapugoda, CSIRO, M. Mahoney, University of Newcastle, Australia, R. Pearson, Pearson Coal Petrography, Canada

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**Tuesday, 16 June 2015**

**16:00-17:20 | Track B | Session 5**

**Blast Furnace Ironmaking – Fundamentals 1**

*Chairman: J. Schenk, Montanuniversität Leoben, Austria*


16:20  **Estimation of minimum coke layer thickness by developing pressure drop estimation model about cohesive zone in blast furnace**, K. Ichikawa, J. Ishii, S. Watakabe, M. Sato, N. Oyama, H. Matsuno, JFE Steel Corporation, Japan

16:40  **Advanced analysis / characterisation methods of carbon bearing materials for the blast furnace process**, H. Mittelstädt, U. Janhsen, A. Hirsch, J. Brum, ThyssenKrupp Steel Europe AG, Germany, V. Flahaut, P. Jeanneau, SODERN, France

Tuesday, 16 June 2015
16:10-17:50 | Track C | Session 6
Blast Furnace Ironmaking – Blast Furnace Campaign Life Extensions 2
Chairman: F. Reufer, PIRSON Management GmbH, Luxembourg

16:10 The monitoring system of the fireproof lining wear in the blast furnace hearth, A. Dmitriev, Y. Chesnokov, G. Vitkina, M. Zolotyk, O. Ivanov, Ural Federal University, Russia, K. Chen, Beijing Liberty International Engineering Technology Co. Ltd., China

16:30 Requirements for a campaign life of more than 20 years at Blast Furnace 2 of ThyssenKrupp Steel Europe, P. Rüther, M. Peters, ThyssenKrupp Steel Europe AG, Germany

16:50 Blast Furnace #2 Spot Tap Holes Mixed Material Relining, G. Gilis, ArcelorMittal, Poland


17:30 Blast furnace hearth grouting at Tata Steel in IJmuiden, J. Liefhebber, R. Hes, J. Stuurwold, J. van der Stel, L. Bol, Tata Steel, Netherlands

Wednesday, 17 June 2015
9:00-10:40 | Track A | Session 7
Cokemaking – Coal blending practices and handling
Chairman: D. Jenkins, CSIRO, Australia

9:00 Predictive model for blending coking coals to produce high strength coke, R. Leeder, Canadian Carbonization Research Association, T. Todoschuk, ArcelorMittal Dofasco, C. Howey, Teck Coal Ltd, L. Giroux, N. Wing, T. McPhee, CanmetENERGY Natural Resources, Canada

9:20 New technique for coal blending design and its application, Y. Dohi, K. Fukada, T. Matsui, T. Yamamoto, H. Sumi, I. Shimoyama, JFE Steel Corporation, Japan

9:40 Compact-grinding of coals – A novel approach within the cokemaking process, H. Z. Kuyumcu, S. Sander, Technische Universität Berlin, Germany

10:00 Effects and impacts of components of coal handling system on coke quality and yield of coke plants, S. Steinbach, R. Neuwirth, R. Kim, Thyssenkrupp Industrial Solutions AG, Germany

10:20 Coal handling bulk density measurement – implications for achieving control in industrial coke plants, T. Todoschuk, ArcelorMittal Dofasco, K. W. Ng, L. Giroux, T. MacPhee, CanmetEnergy Ottawa, Canada
Wednesday, 17 June 2015
9:00-10:20 | Track B | Session 8
Blast Furnace Ironmaking – Fundamentals 2
Chairman: E. Pisilä, SSAB Europe, Finland

9:00 Study of PCI coal combustion in a bench-scale simulation rig, T. Todoschuk, ArcelorMittal Dofasco, S. Ray, L. Giroux, T. MacPhee, K. W. Ng, CanmetENERGY, Canada
9:20 Effects of carbonaceous material’s ash on iron carburization at initial reaction stage, K.-I. Ohno, S. Tsurumaru, T. Maeda, K. Kunitomo, Kyushu University, Japan, D. Senk, H. W. Gudенau, A. Babich, RWTH Aachen University, Germany
9:40 Improvement of gas utilisation of BF #7 of Bhilai Steel plant through utilization of over burden probe, B. Das, S. Kumar, A. Arora, S. Goswami, M. Kumar Tiwari, Steel Authority of India Limited, India

Wednesday, 17 June 2015
9:00-10:20 | Track C | Session 9
Direct Reduction and Smelting Reduction – Fundamentals 1
Chairman: Y. Gordon, Hatch, Canada

9:00 Recovery of iron and nickel from nickel converter slag by smelting reduction process, M. Ma, P. Zhongye, W. Chuangu, L. Bing, T. Xulong, China ENFI Engineering Corporation, China
9:40 High-Carbon DRI with ENERGIRON DR Technology, P. Duarte, Tenova HYL, A. Martinis, Danieli, Mexico
10:00 Straw fiber utilization in rotary hearth furnace process for direct reduced iron production, D. Duan, H. Hongliang, Chinese Academy of Sciences, Y. Peng, Hebei United University, China
<table>
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<tr>
<th>Time</th>
<th>Track D</th>
<th>Session 10</th>
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<tr>
<td>9:00</td>
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<td><strong>Sintering and Pelletizing – Fundamentals 1</strong></td>
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<td><strong>Direct Reduction and Smelting Reduction – Fundamentals 2</strong></td>
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<td><strong>Chairman:</strong> V. Ritz, Studiengesellschaft für Eisenerzaufbereitung SGA, Germany</td>
<td><strong>Chairman:</strong> J. Noldin, Lhoist, Belgium</td>
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<td><strong>Chairman:</strong> R. Fandrich, Steel Institute VDEh, Germany</td>
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<td></td>
<td><strong>Effect of heating rates on the sintering of oxidized magnetite pellets during induration,</strong></td>
<td><strong>Laboratory scale study of reduction kinetics of iron oxides on direct reduction conditions,</strong></td>
<td><strong>On the simultaneous pellets metallization, soot formation and DRI carburization kinetics in DR shaft furnaces,</strong></td>
<td><strong>fos coke plant ovens repairs,</strong></td>
<td><strong>Determination of optimized coke oven chamber dimension in relation to minimum investment costs,</strong></td>
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<td>9:20</td>
<td><strong>Iron ore sintering process with biomass utilization,</strong></td>
<td><strong>Iron ore fines processing-Modular plants to suit various production capacities,</strong></td>
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<td>E. Mousa, A. Babich, D. Senk, RWTH Aachen University, Germany</td>
<td>T. Stefan, J. Nepper, M. Laumann, T. Rothenfluh, S. Mehl, Outotec, Germany</td>
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<td>9:40</td>
<td><strong>Softening and melting characteristics of pellet – sinter mixtures,</strong></td>
<td><strong>Cokemaking – Latest Developments in Slot Oven Plant Technology and Design</strong></td>
<td></td>
<td><strong>Determination of optimized coke oven chamber dimension in relation to minimum investment costs,</strong></td>
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<td>P. Gomes Bueno, H. Cardoso, A. Bailon, Samarco Mineração, L. F. Andrade de Castro, Universidade Federal de Minas Gerais, Brazil, V. Ritz, Studiengesellschaft für Eisenerzaufbereitung SGA, Germany</td>
<td><strong>Chairman:</strong> R. Fandrich, Steel Institute VDEh, Germany</td>
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<td>R. Neuwirth, R. Kim, ThyssenKrupp Industrial Solutions AG, Germany</td>
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<td>10:00</td>
<td><strong>The effect of high grade sinter feed on sintering performance,</strong></td>
<td><strong>fos coke plant ovens repairs,</strong></td>
<td><strong>Determination of optimized coke oven chamber dimension in relation to minimum investment costs,</strong></td>
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<td>H. Cardoso Pereira, P. R. S. Souto, SAMARCO MINERAÇÃO S/A, A. E. C. Peres, EEUFG, Brazil, V. Ritz, Studiengesellschaft für Eisenerzaufbereitung SGA, Germany</td>
<td>F. Bacou, F. Sgro, P. Jullien, ArcelorMittal Fos sur Mer, France</td>
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<td>10:20</td>
<td><strong>Relations between iron ore pellet induration reactions, microstructure and quality,</strong></td>
<td><strong>Determination of optimized coke oven chamber dimension in relation to minimum investment costs,</strong></td>
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<td>M. Dubé, G. Laforest, R. Leclerc, A. Firth, COREM, Canada</td>
<td>R. Neuwirth, R. Kim, ThyssenKrupp Industrial Solutions AG, Germany</td>
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<td>R. Neuwirth, R. Kim, ThyssenKrupp Industrial Solutions AG, Germany</td>
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11:40 The first coke making plant in Indonesia – technological highlights, A. Esposito, F. Cerutti, Paul Wurth Italia S.p.A., Italy, B. Otten, M. Petzsch, DMT GmbH & Co. KG, Germany

12:00 Commissioning of two complete sets of coke oven machines during the start-up of a new coke making complex, A. Molinari, Paul Wurth Italia S.p.A., Italy, K. Nowitzki, Schalker Eisenhütte Maschinenfabrik GmbH, Germany

12:20 Battery heating optimization with coke oven gas firing, M. Landreau, Y. Hergalant, J. P. Gailliet, CPM, G. Ghazal, P. D. Nguyen, ArcelorMittal Maizières Research, FRA, France

12:40 Construction and commissioning of coke plant capacity increase HKM – an important contribution for securing the production site, B. Kopietz, H. Beckmann, L. Nelles, Hüttenwerke Krupp Mannesmann GmbH, Germany

Wednesday, 17 June 2015
11:00-12:00 | Track D | Session 14
Sintering and Pelletizing – Fundamentals 2
Chairman: S. Wienströer, ThyssenKrupp Steel Europe AG, Germany

11:00 Numerical simulation of the sintering and the pelletizing processes, M. Mühlböck, J. Reidetschlaeger, B. Hiebl, E. Fehringer, Primetals Technologies, Austria

11:20 A new sophisticated method for evaluating the reduction-softening properties of iron burden materials, M. Iljana, A. Kemppainen, E.-P. Heikkinen, T. Fabritius, University of Oulu, T. Paananen, O. Mattila, SSAB Europe, Finland

11:40 Softening behavior of iron ore pellets in the cohesive zone of a blast furnace, A. Kemppainen, M. Iljana, E.P. Heikkinen, T. Fabritius, University of Oulu, O. Mattila, T. Paananen, SSAB Europe, Finland, K. I. Ohno, T. Maeda, K. Kunitomo, The Kyushu University, Japan

12:00 Increase of the sinter basicity through the insertion of partially inert magnesium silicate mini lumps with mineralogically stable interphase, J. Martinez, E. Ruisanchez, C. Escudero, Pasek Minerales, Spain

Wednesday, 17 June 2015
13:20-15:00 | Track B | Session 15
Blast Furnace Ironmaking – Blast Furnace Refractories and Cooling 1
Chairman: L. Bol, Tata Steel Europe, The Netherlands

13:20 Eliminating carbonaceous working linings in blast furnace hearths, A. J. Dzermejko, Magneco/Metrel Inc., USA
Wednesday, 17 June | Session 15 – 17

13:40 Proven inclined copper stave cooling system with bosh angle adaptation to ensure stable BF operation conditions, J. Hunger, J. Mernitz, ArcelorMittal Eisenhüttenstadt GmbH, J. Buchwalder, Expertim Eisenhüttenstadt, F. Boert, C. Dratner, KME Europe, R. Hebel, Paul Wurth Refractory & Engineering, Germany

14:00 Investigation of reasonable hot face conditions for blast furnace stave thermal response interpretation, L. North, D. Pinson, S. Chew, P. Zulli, BlueScope Limited, Australia

14:20 Improvement of cooling water characteristics through the use of metallic nanoparticles, M. Stadlbauer, U. Janhsen, J. Bergmann, ThyssenKrupp Steel Europe AG, Germany

14:40 Analysis of thermal stresses in the blast furnace hearth considering the contact of refractory blocks, Y. Kaymak, T. Hauck, VDEh Betriebsforschungsinstitut GmbH, R. Lin, H. Rausch, AG der Dillinger Hüttenwerke, Germany

Wednesday, 17 June 2015
13:20-15:20 | Track C | Session 16
Blast Furnace Ironmaking – Modern Process Control Techniques 1
Chairman: R. van Laar, Danieli Corus BV, The Netherlands


13:40 Multipoint temperature & heat flux sensor probes, a practical tool for an improved BF-Hearth lining observation management, R. Hebel, S. Roith, J. Houde, Paul Wurth Refractory & Engineering GmbH, Germany

14:00 Development of a virtual blast furnace training system, C. Zhou, T. Wang, L. Philips, J. Wang, D. Fu, J. Moreland, Purdue University Calumet, Y. Zhao, J.C. Capo, United States Steel Corporation, USA


14:40 Blast furnace hearth liquid level monitoring using pre-filtered EMF data in a multivariate regression approach, H. Bartusch, T. Hauck, VDEh Betriebsforschungsinstitut GmbH, J. Pethke, T. Mirkovic, Salzgitter Flachstahl, Germany

15:00 The development of an innovative liquid measurement and management system at OneSteel Whyalla, J. Tsalapatis, R. Keil, OneSteel/Arrium Steel, Australia

Wednesday, 17 June 2015
13:20-14:40 | Track D | Session 17
Sintering and Pelletizing – Fundamentals 3
Chairman: T. Stefan, Outotec, Germany

13:20 Increasing the Value in Use of Magnesium Silicate fluxes: taylor made MgO / SiO$_2$ ratio for each application, J. Martinez, C. Escudero, E. Ruisanchez, Pasek Minerales, Spain
13:40 Advanced characterisation and modelling to predict iron ores granulation behaviour, R. A. Jaimes Contreras, F. van Loo, Centre for Research in Metallurgy, M. Evrard, E. Pirard, University of Liege, Belgium, J. Douce, ArcelorMittal, France, M. Shongut, M. Stepanek, Institute of Chemical Technology, Czech Republic

14:00 Contribution to the understanding and modelling of iron ore granulation inside industrial drums, J.-F. Douce, N. Berger, A. Koltssov, ArcelorMittal Maizières R&D, E. Azema, F. Radjai, Laboratoire De Mecanique Et De Genie Civil, France


Wednesday, 17 June 2015

14:00 Journey of excellence in operating non-recovery stamp charged coke oven batteries at Tata Steel, S. Paul, H. Tiwari, S. K. Haldar, S. Verma, R. Sharma, Tata Steel Ltd., India

14:20 Charging and pushing emission control in recovery type-stamp charged coke oven battery, N. Sinha, K. Pasupathy, D. N. Jha, A. Bajaj, N. G. Roy, Tata Steel Ltd., India


15:00 Development of a vertical chamber coking oven for upgrading lignites or sub-bituminous coal, M. Scheller, ThyssenKrupp Industrial Solutions AG, J. Kühn-Gajdzik, ThyssenKrupp Industrial Solutions AG, Germany

Wednesday, 17 June 2015

15:20 Life extension of Copper Staves in Blast Furnaces, R. Janjua, World Steel Association, Y. De Langhe, ArcelorMittal, Belgium, M. Esmer, Erdemir, Turkey, R. Musante, G. Catalá, Ternium Siderar, Argentina, B. Jansson, SSAB EMEA, Sweden

15:40 First operational results of new designed plate cooler for Salzgitter Blast Furnace A, C. Dratner, F. Böert, KME Germany GmbH & Co. KG, J. Pethke, R. Rockstroh, S. Holz, Salzgitter Flachstahl GmbH, Germany

16:00 The Role of Copper Staves in Achieving Efficient Operation and Long Blast Furnace Campaign Lifetime, J.-P. Simoes, N. Maggioli, C. de Gruiter, P. Tockert, Paul Wurth S.A., Luxembourg

16:20 Blast furnace cooling stave design, M. Smith, J. Fletcher, R. Harvey, R. Horwood, Primetals Technologies, United Kingdom
Wednesday, 17 June 2015
15:40-17:20 | Track C | Session 20
Blast Furnace Ironmaking –
Modern Process Control Techniques 2
Chairman: B. Stackhouse, ArcelorMittal, USA

15:40 Integrated burden control operation for blast furnaces,
B. Schürz, H. Fritschek, T. Kronberge, Primetals
Technologies, Austria

16:00 Development of a 3D radar profilemeter at Salzgitter BF B,
J.-F. Stumper, H.U. Morgenstern, U. Oster, K. Viktor,
TMT Tapping Measuring Technology, T. Josupeit, T. Mirkovic,
J. Pethke, Salzgitter Flachstahl, Germany

16:20 CFD Investigation of the Effects of Burden Conditions on
Blast Furnace Performance, C. Zhou, T. Okosun, B. Wu,
A.K. Silaen, Purdue University Calumet, USA

16:40 Applications of Blast Furnace Visualization Technology at
Europe, Z. Gao, University of Science & Technology Beijing,
T. Gao, Shenwang Pioneer Tech. Corporation Beijing,
X. Yang, Shenwang Hitech GmbH, China

17:00 Stable blast furnace control by advanced measurement
techniques, J. van der Stel, K. Andreev, Tata Steel,
Netherlands, T. Bell, Tata Steel Long Products, J. Raleigh,
Tata Steel Strip UK, United Kingdom

Wednesday, 17 June 2015
15:40-17:40 | Track D | Session 21
Sintering and Pelletizing – Sinter Plant: Waste Gas
Recycling and Waste Gas Cleaning
Chairman: H. B. Lüngen, Steel Institute VDEh, Germany

15:40 Continuous improvement of LEEP within the last years,
O. Hoefer, H. P. Eisen, R. Liebisch, C. Riedel, B. Oehling,
M. Schims, Hüttenwerke Krupp Mannesmann GmbH, Germany

16:00 Optimised waste gas recirculation lay-outs for
environment-friendly and energy efficient sintering of iron
ores, B. Vanderheyden, F. van Loo, C. Mathy, J. C. Pierret,
CRM Group, Belgium

16:20 SWGR – Selective Waste Gas Recirculation – next
generation, M. Mühlböck, E. Fehringer, G. Naderer,
Primetals Technologies, Austria

16:40 New Sinterplant #2 at Bhushan Power and Steel Limited,
M. Hoffmann, K. Kinzel, G. Nouailie-Degorce, J. de Frutos
Santamaria, Paul Wurth S.A., Luxembourg, R. N. Yadav,
R. Pattajoshi, Bhushan Power and Steel, India

17:00 Reduction of NOx emissions in sinter plants with catalytic
bags filter, A.-M. Iosif, O. Havelange, ArcelorMittal,
B. Demontard, J. Ebert, W. L. Gore & Associates, France

17:20 Operational experience in the field of sintering with the
new installed Denox plant at voestalpine Linz, B. Putz,
voestalpine Stahl GmbH, Austria
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<th>Time</th>
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<tr>
<td>9:00</td>
<td>Repairing of hot coke oven batteries. Development of diagnosis &amp; repair method one way to maintain the production capacity</td>
<td>A. Sarkar, Tata Steel, India</td>
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<td>9:20</td>
<td>Development and application of appropriate BF coke strength after reaction</td>
<td>J.-S. Shiau, Y. C. Ko, C. K. Ho, M. T. Hung, China Steel Corporation(CSC), Taiwan</td>
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<td>9:40</td>
<td>Improvement of coke strength by control of particle size of semi-soft coking coal</td>
<td>J.-H. Choi, A. Jin-Young, S. Jong-Beom, Y. Sung-Seop, Hyundai Steel Company, South Korea</td>
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<td>10:00</td>
<td>„ZaReO“ – the individual regulation of raw coke oven gas pressure in coke oven chambers</td>
<td>A. Sobolewski, H. Fitko, Institute for Chemical Processing of Coal, Poland</td>
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<td>10:40</td>
<td>POSCO Cokemaking End Flue Repair Technology and the result of diagnosis</td>
<td>B. Lee, S.-D. Park, POSCO, South Korea</td>
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<td>9:00</td>
<td>Study on burden distribution with bell less top in blast furnace of Hyundai steel company</td>
<td>H.-S. Oh, W. S. Choi, H. J. Yoon, S. S. Yoon, Hyundai Steel Company, South Korea</td>
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<td>9:20</td>
<td>The reline of ArcelorMittal Galati blast furnace n°5 – switch from a double bell top to a compact bell less top</td>
<td>D. Houssa, F. Didelon, ArcelorMittal Galati, L. Hauser, P. Toolert, C. Recher, Paul Wurth S.A., Romania</td>
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<td>9:40</td>
<td>Distribution control of nut coke in blast furnace burden</td>
<td>J. Kim, Y. Lee, C. Baek, C. Lee, POSCO, I. Lee, GEM-Graduate school of Engineering Mastership in POSTECH, South Korea</td>
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<td>10:00</td>
<td>Stockhouse-based Defreezing, Drying and Pre-heating of Coke and Pellets</td>
<td>R. Vaynshteyn, P. Verbraak, Danieli Corus BV, Netherlands</td>
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<td>10:20</td>
<td>Improved raw material efficiency in hot metal production</td>
<td>T. Paananen, P. Erkki, SSAB, Finland</td>
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<td>9:00</td>
<td>Development of a TGA technique for carbon differentiation in BF dust and sludge</td>
<td>T. Todoschuk, S. Graeme, ArcelorMittal Dofasco, K. Wing, L. Giroux, T. MacPhee, CanmetENERGY, Canada</td>
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Thursday, 18 June | Session 24 – 26


10:00 Optimization strategies for pulverized coal injection into the blast furnace, R. Schott, Küttner GmbH & Co. KG, Germany

Thursday, 18 June 2015
9:00-10:20 | Track D | Session 25
Direct Reduction and Smelting Reduction – Gas-based DRI Processes and New Developments 1
Chairman: C. Böhm, Primetals Technologies, Austria

9:00  DRI production using coke-oven gas, COG – results of midrex Thermal Reactor System®, TRS™, testing and future commercial application, G. Metius, M. Freeland, Midrex Technologies Inc., USA

9:20  Status and start-up of United Steel Company, Sulb, Midrex® combination CDRI / HDRI Plant, L. Shields, Midrex Technologies Inc., USA

9:40  The breakthrough ironmaking technologies combined with ENERGIRON, blast furnace and syngas, H. Ichikawa, T. Nakayama, Nippon Steel & Sumikin Engineering Co. Ltd., Japan, P. E. Duarte, HYL Technologies S.A. de C.V., Mexico, A. Martinis, Danielli & C., Italy

10:00 Developing the Midrex® direct reduction process – technological innovations and process enhancements, H. Gaines, G. Hughes, Midrex Technologies Inc., USA

Thursday, 18 June 2015
9:00-10:20 | Track E | Session 26
Sintering and Pelletizing – Sinter Process Optimization 1
Chairman: B. Vanderheyden, CRM Group, Belgium

9:00  Use of a PGNAA to minimize standard-deviation of sinter basicity, B. Oehling, B. Kohnen, F. Demirci, G. Grabietz, Hüttenwerke Krupp Mannesmann GmbH, C. Obert, Thermo Fisher Scientific Messtechnik GmbH, Germany, G. Noble, Thermo Fisher Scientific, Australia

9:20  Development of partially reduced iron production technology in travelling grate, S. Son, M. Wang, J. Park, H. Jeong, B. Cho, POSCO, South Korea

9:40  Real-time raw materials chemistry stabilization and product quality control using MAYA laser elemental analyser in sintering, ironmaking, refractory, A. Baryshnikov, M. Gaft, Y. Groisman, Laser Distance Spectrometry Ltd., L. Akselrod, A. Savchenko, Magnezit Group, Israel
10:00  An optimized pre-processing of by-products improves sintering performances and limits pollutants emissions, J.-F. Douce, A. Iosif, H. Saquare, G. Lesoin, ArcelorMittal Maizières R&D, France

Thursday, 18 June 2015
10:40-11:40 | Track C | Session 28
Blast Furnace Ironmaking – Injection of Auxiliary Reductants and Oxygen 2
Chairman: H. B. Lüngen, Steel Institute VDEh, Germany

10:40  The new coal injection facility at DK Recycling und Roheisen GmbH, C. Hillmann, B. Dhonau, DK Recycling und Roheisen GmbH, Germany
11:00  NLMK’s experience in operating blast furnaces with PCI and natural gas injection, S. Myasoyedov, I. Kurunov, S. Filatov, V. Vlasov, Novolipetsk Steel, Russia
11:20  Oxygen blast furnace for the use of low-grade materials, K. Takahashi, T. Nouchi, M. Sato, JFE Steel Corporation, Japan

Thursday, 18 June 2015
10:40-11:40 | Track D | Session 29
Direct Reduction and Smelting Reduction – Gas-based DRI Processes and New Developments 2
Chairman: H. Bartusch, VDEh Betriebsforschungsinstitut GmbH, Germany

10:40  Coal gasification-based DRI production – start-up and operation of JSPL’s Angul I MXCOL® DRI Plan, T. Wieslaw, C. Ravenscroft, Midrex Technologies Inc., USA

11:00  Packing energy and iron to serve the meltshop requirements, A. Martinis, Danieli & Co. Officine Meccaniche SpA, Italy, P. Duarte, Tenova HYL, Mexico
11:20  Analysis on direct reduction technology of shaft furnace with hydrogen-rich gas, C.-Z. Cao, Beijing Shougang International Engineering Technology CO. Ltd., China

Thursday, 18 June 2015
10:40-12:40 | Track E | Session 27 + 30
Chairmen: P. Gomes Bueno, Samarco Iron Ore Europe B.V., The Netherlands
V. Ritz, Studiengesellschaft für Eisenerzaufbereitung SGA, Germany

10:40  Two challenges to the system of periclase quality assessment, I. Maryasev, L. M. Axelrod, A. A. Platonov, D. R. Melnikova, Magnezit Group, Russia
11:00  Optimisation of sintering operation through permeability control at Bokaro Steel Plant, India, A. Mallick, S. Dhara, S. Kumar, A.K. Sahu, Steel Authority of India Ltd., S.K. Singh, B.B. Lal, Sintering Plant Bokaro Steel Plant, India
11:20  Improved sinter mix preparation while using challenging materials (IMSIMI RFCS funded project), F. van Loo, CRM Group, Belgium, E. Pirard, ULg – University of Liège, R. Pietruck, BFI, M. Martinez Pacheco, Tata Steel Technology Center, Belgium, J. Douce, ArcelorMittal Maizières, France
11:40  Sinter cooler design by Paul Wurth, H. Kassebaum, M. Dirks, D. Kramer, M. Novak, Paul Wurth Umwelttechnik GmbH, Germany
Thursday, 18 June | Session 30 – 32

12:00 Optimizing iron ore agglomeration plant performance, S. Mehl, T. Stefan, S. Haus, A. Lagerstedt, Outotec, Germany
12:20 The sinter shaft cooler: A highly energy-efficient solution for sinter cooling, C. Aichinger, M. Böberl, A. Wegerer, S. Hötzing, Primetals Technologies, Austria

Thursday, 18 June 2015
11:00-12:40 | Track B | Session 31 + 40
Blast Furnace Ironmaking – Hot Metal and Slag Quality, Slag Granulation + Blast Furnace Liquid Management and Casting Practice
Chairmen: M. Sprecher, Steel Institute VDEh, Germany
W. Weiss, ArcelorMittal Bremen, Germany

11:00 Advance in technology and practice of titania-magnetite ore processing, Y. Gordon, Hatch, Canada, S. Filatov, NLMK, V. Filippov, NTMK, S. Zagainov, L. Gileva, UFU, Russia
11:20 Dry slag granulation with energy recovery: operation of full scale pilot plant, D. Michels, H. Kappes, Paul Wurth S.A., Luxembourg
11:40 Dry slag granulation with heat recovery, I. McDonald, A. Werner, Primetals Technologies, United Kingdom
12:00 20 years’ experience in improving the tapping strategy of BF 2 at ThyssenKrupp Steel Europe, A. Fiedler, M. Peters, P. Rüther, T. August, ThyssenKrupp Steel Europa AG, Germany
12:20 Consequences of Lower Furnace Heat Loss, R. Vaynshteyn, V. van Straaten, Danieli Corus BV, Netherlands

Thursday, 18 June 2015
11:20-13:00 | Track A | Session 32
Cokemaking – Coke Plant Technologies 2
Chairman: T. Todoschuk, ArcelorMittal Dofasco, Canada

11:20 Coke oven batteries combustion control considering periods of coal charging and coke oven wall maintenance, S. Nishigaki, T. Harada, S. Suzuki, K. Tsuda, JFE Steel Corporation, Japan
11:40 Automatic stamping charger – stamping of blended coal – theoretical study and practice analysis at tkcsa, Y. S. F. Junqueira, L. de Souza Pinto, R. J. Coelho, ThyssenKrupp CSA, J. M. Clemente, Independent Consult, Brazil
12:00 Stamp charging coke oven battery – state of the art, A. Esposito, M. Bisogno, Paul Wurth Italia S.p.A., Italy
12:20 Recovery of hydrogen sulphide from coke oven gas through claus process at Tata Steel: an experience, R. Kumar, H. Tiwari, A. Roy, R. Sharma, S. K. Haldar, Tata Steel Ltd., India
12:40 Engineering, construction and commissioning of the gas treatment plant IISCO, Burnpur India, B. Otten, DMT GmbH & Co. KG, Germany
Thursday, 18 June 2015
12:00-14:00 | Track C | Session 33 + 39
Blast Furnace Ironmaking – Hot Blast Stoves
Chairmen: J. Reboul, ArcelorMittal Mediterranée, France
E. Schuster, voestalpine Metal Engineering GmbH & Co. KG, Austria

12:00 Development of hot blast stove design without conventional combustion chamber, Kalugin design, B. Prokofiev, M. Kalugina, Yu. Murzin, S. Ivlev, A. Subbotin, Kalugin JSC, Russia
12:40 Primetals Technologies development of the ironmaking furnace hot blast system, M. Geach, M. Fletcher, G. Brown, Primetals Technologies, United Kingdom
13:00 Dome repair of external combustion chamber hot blast stoves, E. Schaub, M. Gantenberg, R. Allmannsdörfer, M. Ngassam, Paul Wurth Refractory & Engineering GmbH, Germany, N. N., ChinaSteel Corporation, China

Thursday, 18 June 2015
12:00-13:00 | Track D | Session 34
Direct Reduction and Smelting Reduction – Production and Use of DRI and HBI
Chairman: J. Choi, POSCO, Germany

12:00 DRI processing with blast furnace, EAF or jet process – a comprehensive overview, G. Wimmer, W. Sterrer, K. Pastucha, J. Apfel, Primetals Technologies, Austria
12:20 Strategies to Use Direct Reduced Iron in the Integrated Steel Value Chain, I. Cameron, N. Patel, G. Yakov, Hatch Ltd., Canada
12:40 History and new milestones in submerged arc furnace technology for ferro alloy and silicon production, R. Degel, C. Fröhling, SMS Siemag AG, Germany, M. Meyn, A. van Niekerk, Metix Ltd., South Africa

Thursday, 18 June 2015
13:20-14:20 | Track B | Session 35
Blast Furnace Ironmaking – Coke Quality Requirements and Reduced Coke Rates
Chairman: J. Pethke, Salzgitter Flachstahl GmbH, Germany

13:20 Influence of intentionally deteriorated coke properties on performance of blast furnace 2 schwelgern, R. Schwalbe, R. Klock, U. Janhsen, P. Schmöle, M. Peters, ThyssenKrupp Steel Europe AG, Germany
13:40 Influence of raw material condition on behavior of reactive coke agglomerate, S. Kogure, Nippon Steel & Sumikin Engineering Co. Ltd., H. Yokoyama, K. Higuchi, S. Nomura, Nippon Steel & Sumitomo Metal Corporation, Japan
Thursday, 18 June | Session 35 – 38

14:00  Coke CSR effect on blast furnace performance, V. Titov, I. Kurunov, Novolipetsk Steel, Russia

Thursday, 18 June 2015
13:20-14:20 | Track E | Session 36
Sintering and Pelletizing – Pelletizing
Chairman: D. Senk, RWTH Aachen University, Germany

13:20  Circular pelletizing technology – a revolutionary solution, R. Redl, A. Fulgencio, C. Aichinger, B. Hiebl, Primetals Technologies, Austria
13:40  Predicting iron ore pellet degradation during handling from pellet plant to steel mill, M. Otaviano, L. M. Tavares, R. Magalhães de Carvalho, M. R. Rocha, H. Cardoso, Samarco Mining, Brazil
14:00  Present IJmuiden Limestone-dolomite pellets: evolution of the pellet flux, W. Husslage, J. Tijmensen, J. Small, R. Jonckbloedt, H. Jak, Tata Steel, Netherlands

Thursday, 18 June 2015
13:40-14:40 | Track D | Session 38
Direct Reduction and Smelting Reduction – Smelting Reduction Processes
Chairman: H. B. Lüngen, Steel Institute VDEh, Germany

13:40  Corex® – An answer for hot metal production in a changing environment, W. Sterrer, J. Shibu, J. Wurm, Primetals Technologies, Austria
14:00  FINEX® – an old vision of the iron and steel industry becomes reality, J. Shibu, W. Sterrer, Primetals Technologies, Y. Sang-ho, S. Sungkee, Posco Ltd., Austria
14:20  The Hlsarna ironmaking process, M. Koen, K. Meijer, J. van der Stel, C. Zeilstra, C. Teerhuis, G. Keilman, M. Ouwewhand, Tata Steel, Netherlands


Thursday, 18 June 2015
13:40-14:40 | Track A | Session 37
Cokemaking – Coke Quenching Technologies
Chairman: H. Kuyumcu, Technische Universität Berlin, Germany

13:40  Experience of Tata Steel’s first CDQ stabilisation, B. Biswas, A. Kumar, R. Sahu, S. Singh, P. Mishra, S. K. Haldar, Tata Steel, India
14:00  Advanced technology and application of large-scale CDQ, N. Hamasaki, M. Watanabe, JP Steel Plantech Co., Japan
STEELMAKING

- Oxygen Steelmaking
- Electric Steelmaking
- Continuous Casting, Near-net Shape Casting and Ingot Casting
### Tuesday: 16 June

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### Wednesday: 17 June

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# Program Overview | Steelmaking

## Thursday: 18 June

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The complete program on your mobile, just scan
Tuesday, 16 June 2015
14:00-15:40 | Track D | Session 1
Casting – Plants, Revampings and New Installations 1
Chairman: J. Kempken, SMS Siemag AG, Germany

14:00 Top quality slab casting: the 350-mm-thick x 2.6-meter-wide slab caster at Yingkou, S. Baf, G. Busolin, Danieli & Co. Officine Meccaniche SpA, Italy

14:20 Vertical continuous casting machine for large blooms, A. N. Grundy, F. Zani, L. Leipner, T. Meier, SMS Concast AG, Switzerland, J. Sanders, N. Valentine, C. Eastman, TimkenSteel, USA

14:40 Modernization of HKM slab caster 3 for highest quality requirements, M. Schmitz, J. Uhlig, G. Kemper, Hüttenwerke Krupp Mannesmann GmbH, Germany, J. Penn, S. Burger, Primetals Technologies, Austria

15:00 Steel quality improvement with the introduction of inert gas by using a tundish gas diffusor in a thin slab tundish at JSC “OMK steel”, A. Tolstolutsky, J. Richaud, T. Held, VESUVIUS, A.M. Grigoriev, V.V. Kislica, D.V. Morov, D.Y. Kotov, OMK-Steel, Vyksa, Russia

15:20 Belt Casting Technology BCT® – process technology and operating results of the world’s first industrial BCT® plant, J. Wans, C. Geerkens, H. Cremers, SMS Siemag AG, U. Grethe, P. Juchmann, R. Schmidt-Jürgensen, Salzgitter Flachstahl GmbH, Germany

Tuesday, 16 June 2015
14:00-15:40 | Track E | Session 2
Casting – Secondary Cooling
Chairman: S. Michelic, INTECO TBR casting technologies GmbH, Austria

14:00 Experimental und numerical investigations on cooling efficiency in the secondary cooling zone during continuous casting of steel, G. Arth, M. Taferner, C. Bernhard, Montanuniversität Leoben, Austria

14:20 Increased productivity and quality through conversion of secondary cooling to air mist system on beam blank, bloom and round combi caster, R. Wolff, Lechler GmbH, Germany, S. Singh, S. Anand, S. Sahu, L. Goyal, S. Awasthi, Jindal Steel & Power Ltd. Raigarh, S. Chacko, Lechler India Pvt. Ltd., India

14:40 New challenges in modelling and secondary cooling control of continuous steel casting, T. Mauder, J. Stetina, L. Klimes, Brno University of Technology, Czech Republic

15:00 Secondary cooling: roll heat transfer during dry casting, M. Javurek, Johannes Kepler University, P. Ladner, LCM, J. Watzinger, P. Wimmer, G. Shan, Primetals Technologies, Austria

15:20 Characteristics of heat transfer in the high speed casting upto 8.0m/min, J.-Y. Hwang, S.-Y. Kim, S.-H. Lee, POSCO, South Korea
Tuesday, 16 June 2015
14:00-15:00 | Track F | Session 3
Casting – Monitoring, Scheduling and Logistics
Chairman: H. Schliephake, Georgsmarienhütte GmbH, Germany

14:00  From the caster to the rolling mill – transport, inspection, conditioning, and treatment of cast products, P. Wieser, S. Hahn, F. Wimmer, B. Winkler-Ebner, D. Burzic, Primetals Technologies, Austria

14:20  Storage improvement by clever warehouse logistics at ArcelorMittal Eisenhüttenstadt, R. Grabowski, Primetals Technologies, Germany

14:40  Hot charging made easy – substantial benefits generated through synchronized continuous caster and hot strip mill scheduling optimization, R. Jaeger, PSI Metals Belgium nv, Belgium, N. Sarikaya, Ali Osman Kılıç, Turkey

Tuesday, 16 June 2015
14:00-15:20 | Track G | Session 4
Electric Steelmaking – Raw Materials and Refractories
Chairman: H. Pronk, Tata Steel Europe, The Netherlands

14:00  The impact of scrap upgrading on EAF production cost and environmental performance, R. Gyllenram, O. Westerberg, Kobolde & Partners AB, Sweden

14:20  Advanced scrap yard management by integrated I2 module, G. Pellegrini, F. Fabris, M. Michelesio, SMS Concast SpA, Italy

14:40  Classification of DRI/HBI based on the performance in the EAF: A help for steelmaker’s procurement of metallics., R. Gyllenram, Kobolde & Partners AB, P. Sikström, R. Hahne, LKAB, Sweden

15:00  Continuous improvement in EAF performance with HOT DRI charge: the capacity enhancement at Emirates Steel, T. Narholz, A. Pesamosca, Danielli & Co. Officine Meccaniche SpA, Italy

Tuesday, 16 June 2015
14:20-16:00 | Track H | Session 5
Oxygen Steelmaking – Secondary Metallurgy
Chairman: A. Heinen, Saarstahl AG, Germany

14:20  Desulphurization of molten steel in RH-degasser by powder blowing to produce silicon steel – operational results maanshan ISCO, PR China, C. Schrade, Tenova Metals, Germany, Z. Zulhan, Institut Teknologi Bandung (ITB), Indonesia

14:40  Innovative vacuum-tank degassing technologies: well-established metallurgical performance figures achieved by using dry mechanical pumps, H. Koblenzer, F. Gandin, Danielli & Co. Officine Meccaniche SpA, Italy

15:00  Development of RH automation system in secondary refining, J. W. Chae, POSCO, South Korea

15:20  Hydrogen control in the molten steel by raw materials and degassing process, S. Kim, POSCO, South Korea

15:40  Thermal operation of ladle furnace with gas bubble blowing, Y. Gordon, Hatch, Canada, V. Shvidkiy, S. Novokreshenov, D. Cheremisin, UFU, Russia
Tuesday, 16 June 2015
16:00-17:40 | Track D | Session 6
Casting – Plants, Revampings and New Installations 2
Chairman: A. Flick, Primetals Technologies Austria GmbH, Austria

16:00 Latest bloom caster solutions for automotive steel grades, D. Burzic, R. Simon, Primetals Technologies, Austria
16:20 Largest round bloom caster: Danieli-ABS experience of ø=850mm, A. Sgrò, M. Rinaldi, Danieli & Co. Officine Meccaniche SpA, M. Truant, ABS, Italy, O. Lebrun, ABS Centre Metallurgique, France
16:40 Fast casting of 150sq billets – boost of productivity, P. Cobelli, A. N. Grundy, S. Feldhaus, SMS Concast AG, Switzerland, C.H. Lo, Y.C. Hsu, Thung Ho Steel Enterprise Corp., Taiwan
17:00 Revamp of continuous casting machines, S. Feldhaus, A. N. Grundy, M. Abram, SMS Concast AG, Switzerland

Tuesday, 16 June 2015
16:00-17:40 | Track E | Session 7
Casting – Technology and Plant Equipment 1
Chairman: R. J. van den Bogert, Tata Steel Strip Products IJmuiden, The Netherlands

16:00 Cold start technology from vesuvius, A. Rezaie, P. Nolli, P. Dupel, K. Ray, Vesuvius, USA
16:20 Technological and automation upgrade for CSP plant ThyssenKrupp Steel Europe Bruckhausen, S. Burger, W. Gruber, W. Pitzer, H. Rametsteiner, Primetals Technologies, Austria
16:40 A novel ultrasonic sensor for mold powder thickness control, F. Mantovani, I. Mazza, S. Spagnol, Ergolines, Italy
17:00 Q – Robot CAST for ladle area, E. Plazzogna, P. Demetlika, R. Ferrari, F. Romano, I. Visentini, Danieli Automation SpA, Italy
17:20 High-productivity plants and innovative technologies meet market demands and future trends, C. Geerkens, L. Fischer, J. Wans, R. Wilmes, SMS Siemag AG, Germany

Tuesday, 16 June 2015
16:00-17:40 | Track F | Session 8
Casting – Ingot Casting
Chairman: H. P. Jung, Deutsche Edelstahlwerke GmbH, Germany

16:00 Process research of solidification in large ingot casting, T. Zhou, L. Junzhan, L. Hui, Baosteel Special Steel Co., Ltd, China
16:20 Automatic virtual optimization of ingot and continuous casting processes, I. Hahn, E. Hepp, M. Schneider, MAGMA Gießereitechnologie GmbH, Germany
16:40 Research of argon protection effects for ingot casting, T. Zhou, Z. Tongjun, Baosteel Special Steel Co., Ltd, China
17:00 Numerical investigations of multiphase-flows in metallurgical reactors using a discrete phase model, A. Rückert, H. Pfeifer, RWTH Aachen University, Germany
17:20 Vacuum induction melting technology and the new design of SMS MEVAC's VIM X-eed® furnace, C. Demirci, M. Hüllen, SMS Mevac GmbH, M. Broxholme, S. Carey, Tata Steel Speciality Steels, Germany
Electric Steelmaking – New EAF Processes

Chairman: K. Krüger, Max Aicher GmbH & Co. KG, Germany

16:00 Intelligent and holistic steel making, M. Fleischer, J. Apfel, Primetals Technologies, Germany


16:40 Use and advantages of ECOSIFC process, E. Martinez Rehlaender, SvMet Engineering S.A., Mexico

17:00 Quantum – first results from TYASA, J. Apfel, A. Müller, D. Steiner, Primetals Technologies, Germany

17:20 A new consteel evolution with iRecovery: better performances in steel production with heat recovery for district heating & ORC turbine power generation, R. Granderath, C. Giavani, Tenova SpA, U. De Miranda, R. Bontempi, ORI MARTIN, Italy

17:40 Sharc – the cost effective melting machine, A. Metzen, Hellenic Halyvourgia, Greece, T. Germershausen, J. Bader, A. Bergs, SMS Siemag AG, Germany

Oxygen Steelmaking – Plants, Processes and Logistics

Chairman: R. Bruckhaus, AG der Dillinger Hüttenwerke, Germany

16:00 Modification and revamp of BOF converter A at Salzgitter Flachstahl GmbH, R. Kromarek, A. Berghöfer, M. Bürgel, Salzgitter Flachstahl GmbH, J. Bader, A. Frankenberger, L. Meier, SMS Siemag AG, Germany

16:20 Efficient scrap and DRI melting with jet process, G. Wimmer, K. Pastucha, A. Fleischanderl, J. Spiess, Primetals Technologies, Austria

16:40 Time management at the BOF meltshop 2 of ThyssenKrupp Steel Europe AG in Duisburg Beeckerwerth, T. Maniura, M. Arns, J. Drewes, ThyssenKrupp Steel Europe AG, Germany

17:00 A model for sequencing and optimizing steel melt shop operations using discrete event system simulation, A. Mukherjee, A. Adak, M.N. Dastur & Co (P) Ltd, India

17:20 Steel plant model – the comprehensive solution for steel plant logistics, F. Schrama, G. van Hattum, D. Merkestein, Danieli Corus BV, Netherlands
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 11 – Tundish</th>
<th>Session 12 – Additives and Refractories 1</th>
<th>Session 13 – Electric Steelmaking – EAF Technology</th>
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<tbody>
<tr>
<td>9:00</td>
<td>CFD optimization of a six-strand continuous casting tundish at Georgsmarienhütte GmbH</td>
<td>The impact of chemical composition change of mold flux applied in low carbon steel in the wear of submerged entry nozzle</td>
<td>Tap hole free opening optimization in the EAF through monitorized grain size distribution control of the EBT filler sand. Laboratory testing &amp; indu</td>
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<td>9:20</td>
<td>Effect of non isothermal melt flows on liquid metal quality in a tundish</td>
<td>Review of the mold powder control technology</td>
<td>Analysis of tundish operation strategy during grade transition in continuous casting</td>
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<td>K. Chattopadhyay, S. Chatterjee, University of Toronto, M. Isac, R. I. L. Guthrie, McGill University, Canada</td>
<td>F. Mantovani, I. Mazza, S. Spagnul, Ergolines LAB, Italy</td>
<td>S. P. Ferro, J. Copola, Tenaris, S. S. Begnis, Instituto Argentino de Siderurgia, Argentina</td>
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<td>9:40</td>
<td>Tundish and SEN development for casting long sequences of wide slabs at Tata LD3</td>
<td>Realizing a child dream: liquid powder for continuous casting</td>
<td>Modelling of the exposed slag ‘eye’ during inert gas shrouding in a tundish</td>
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<td>J. Richaud, Vesuvius, France, H. H. Shah, A. Kumar, C. Bhanu, N. Sinha, Tata Steel Ltd, P. P. Goswami, Vesuvius India LTD, India</td>
<td>S. Nucci, A. Del Moro, R. Carli, M. Alloni, Prosimet SpA, Italy</td>
<td>K. Chattopadhyay, S. Chatterjee, University of Toronto, Canada</td>
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<td>10:00</td>
<td>New measurement system on continuous casting tundishes at Steel of West Virginia provides true steel running level and increases yield by accurate dra</td>
<td>Nanoparticles Behaviour and Addition in the Steel Casting</td>
<td>Analysis of tundish operation strategy during grade transition in continuous casting</td>
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9:20 DC EAF modernization with Primetals Technologies Fin Type Anode, P. Zipp, Primetals Technologies, Germany
10:00 ArcSave: Electromagnetic stirring in the EAF for higher productivity and lower cost, P. Ljungqvist, J. Andersson, A. Bohlin, Outokumpu Stainless AB, L. Teng, H. Hackl, ABB, Sweden
10:20 Latest developments on gas purging systems in BOF and EAF, M. Kirschen, K.-M. Zettl, RHI AG, Austria, R. Ehrengruber, STOPINC AG, Switzerland

Wednesday, 17 June 2015
9:00-10:40 | Track H | Session 14
Oxygen Steelmaking – Hot Metal Pretreatment
Chairman: C. Lindner, HKM Hüttenwerke Krupp Mannesmann GmbH, Germany
9:00 Effect of temperature on desulphurization abilities of different agents, D. Sichen, D. Lindström, Royal Institute of Technology, S. Karamoutsos, Lhoist, Sweden

9:20 Pretreatment and refining of hot metal – efficient technologies to cope with today’s sulphur and phosphorous challenges, R. Hüsken, J. Meier-Kortwig, Küttner GmbH & Co. KG, Germany, S. Sakai, JP Steel Plantech, Japan
9:40 Improving hot metal desulphurization process performance – a case study, Y. Gordon, Hatch, Canada
10:00 Study of the phases formed in hot metal dephosphorization slags and its influence on the dephosphorization efficiency, J. R. Oliveira, S. M. R. Oliveira, F. Costa Broseghini, Federal Institute of Espirito Santo-IFES, Brazil
10:20 Revamping of the hot metal desulphurization stations at Taiyuan Iron & Steel (China), R. Hüsken, H. Rath, Küttner GmbH & Co. KG, Germany

Wednesday, 17 June 2015
10:40-12:00 | Track F | Session 15
Casting – Additives and Refractories 2
Chairman: S. Karrasch, ThyssenKrupp Steel Europe AG, Germany
10:40 Low-carbon spinel stopper rod tip in a thin-slab caster, P. Nolli, Vesuvius Refratorios Ltda, Brazil, J. Aube, A. Munto, A. Morrison, D. Harmon, Vesuvius, S. Wigman, R. Deckard, Nucor Steel Indiana, USA
11:00 Optimized Ar supply from tundish to mould by using the SHP stopper, G. Krumpel, RHI AG, Austria
11:20 A modern refractory approach to tundish technology and processes, M. Casado, B. Secklehner, B. Brosz, A. Viertauer, D. Wappel, RHI AG, Austria
11:40 Tundish refractory optimization for yield, process and productivity improvements at Bhilai Steel Plant, J. Richaud, Vesuvius, France, V. Dhawan, Bhilai Steel Plant, India
Wednesday, 17 June 2015
11:00-12:40 | Track H | Session 16
Oxygen Steelmaking – Environmental Technology and Safety
Chairman: J. Schlüter, SMS Mevac, Germany

11:00 First operating experiences with post-combustion lances at BOF shop LD3, H. Panhofer, J. Lehner, M. W. Egger, voestalpine Stahl GmbH, Austria M. Strelbisky, Tallman Bronze Ltd, Canada
11:20 The interaction between BOF operating practices and dust collection water at Bluescope Port Kembla Steel works, S. Brell, Bluescope Steel Ltd., A. Pask, Nalco, Australia
11:40 Ecoplants gas cleaning solutions for BOF converters, T. Wübbels, C. Fröhling, J. Thomasberger, SMS Siemag AG, Germany
12:00 A new process for utilization of slags from converter steelmaking in the cement industry, G. Wimmer, A. Fleischanderl, Primetals Technologies, Austria, H. Wulfert, Loesche GmbH, H. M. Ludwig, Bauhaus Universität Weimar, Germany
12:20 Integrated modelling of CFD and Thermodynamics, for prediction of organic emissions during pre heating of magnesia-carbon bricks, K. Chattopadhyay, S. Chatterjee, X. Liu, University of Toronto, Canada

Wednesday, 17 June 2015
11:20 Evaluation of casting, deposits in submerged entry shroud and slab cleanliness in a cast sequence of aluminium killed steel, W. Tiekink, H. Visser, P. Rol, Tata Steel, Netherlands
11:40 New radiometric sensor for mould level measurement allowing separate detection of meniscus and powder thickness, G. Pellegrini, G. Michelon, SMS Concast Italia Spa, F. Dal Corso, E. Borsato, Padua University, Italy, S. Fries, G. Ney, Saarstahl AG, R. Nagy, Lech-Stahlwerke GmbH, Germany
12:00 Advantages and benefits achieved by upgrading mould level measurement systems at SSAB Oxilösund, M. Persson, M. Jalk, N. Brogden, Agellis Group AB, E. Westman, SSAB Oxilösund, Sweden

Wednesday, 17 June 2015
11:20-13:00 | Track G | Session 18
Electric Steelmaking – Process Optimization
Chairman: B. Kleimt, VDEh Betriebsforschungsinstitut GmbH, Germany

11:40 Optimization of Arcelor Mittal Zaragoza DC EAF using the SmartFurnace system, G. Fernandez, AMIGE International, Mexico, J. Arribé, J. Laporta, Arcelor Mittal Zaragoza, Spain
Wednesday, 17 June 2015

12:00 Characterization of Ladle furnace slag and its utilization in steel making, N. Behera, SABIC, Saudi Arabia, S. Ahmad, C. Pinheiro, SABIC Metal Technology, Jubail, Saudi Arabia

12:20 ZoloSCAN laser diagnostic system for EAF leak detection and process optimization, K. Grieshaber, Zolo Technologies, USA, F. Martinez, AMIGE, Mexico


14:00 Advanced mold technologies in slab casting, I. Watzinger, F. Wimmer, Primetals Technologies, Austria

14:20 Effects of modified cooling slot design in slab caster mold plates, A. Sinha, T. T. Natarajan, N. Gupta, T. J. Piccone, D. J. Radakovic, United States Steel Corporation, USA

14:40 Role of boron on the formation of internal cracks in microalloyed, high manganese steels for CC, T. Brune, D. Senk, RWTH Aachen University, Germany, G. Alvarez de Toledo Bandeira, Gerdau S.A., Spain, J. Komenda, Swerea KIMAB AB, Sweden, B. Stewart, Materials Processing Institute, United Kingdom

15:00 HD scan: Ultrasonic testing for the internal quality evaluation of cast steel products, T. Gusarova, S. Schulze, A. Runge, M. Reifferscheid, SMS Siemag AG, Germany

Wednesday, 17 June 2015
13:40-15:20 | Track F | Session 19
Casting – Product Quality 1
Chairman: H. Lachmund, AG der Dillinger Hüttenwerke, Germany

13:40 It’s all about temperature – dry casting for optimum surface quality, P. Pennerstorfer, J. Watzinger, C. Enzinger, P. Wimmer, Primetals Technologies, Austria

14:00 Topographic surface inspection system for slabs, R. Fackert, C. Mittag, A. Weinert, IMS Messsysteme GmbH, Germany

14:20 NSENGI’s new developed bloom continuous casting technology for improving internal quality of special bar quality (NS bloom large reduction), Y. Matsuoka, Y. Miura, S. Kittaka, H. Higashi, Nippon Steel & Sumikin Engineering Co. Ltd., Japan

14:40 Mold flow optimization for casting narrow section in CSP at BPSL – India, J. Richaud, Vesuvius, France, R. T. Arasu, BPSL, India

15:00 Danieli Power Mould®: Key technology in evolution for high productivity, high quality and energy saving, L. Morsut, A. De Luca, M. Di Giacomo, Danieli & Co. Officine Meccaniche SpA, Italy
Wednesday, 17 June 2015
14:00-15:40 | Track H | Session 21
Oxygen Steelmaking – Process Optimization, Automation and Monitoring 1
Chairman: H. Peters, VDEh Betriebsforschungsinstitut GmbH, Germany

14:00  The optimization of de-phosphorous double slag converter process in Hyundai Steel, W. ChangHyun, J. O. Jo, J. D. Kim, Y. D. Jeon, S. Y. Lee, C. J. Lee, J. T. Choi, Hyundai Steel Company, South Korea

14:20  Comprehensive process optimization system for JSW steel toranagallu, R. Hubmer, J. Weiss, N. Desai, Primetals Technologies, Austria

14:40  Gas Purging Benefits in the BOF: A Focus on Material Efficiency and CO2 Emission Reduction, T. Kollmann, V. Samm, M. Kirschen, RHI AG, P. Bundschuh, J. Schenk, Montan-Universität, Austria

15:00  Steel-Making plant of Nippon Steel & Sumikin Engineering – establishment of the long-life-technology of the basic oxygen furnace, BOF, etc., F. Otake, T. Tonomori, Nippon Steel & Sumikin Engineering Co. Ltd., Japan

15:20  New damper system for reduction of AOD vibrations, G. Wimmer, S. Pirker, Johannes Kepler University Linz, B. Vorarberger, Primetals Technologies, Austria

Wednesday, 17 June 2015
14:20-15:20 | Track G | Session 22
Electric Steelmaking – Process Control 1
Chairman: T. Matschullat, Primetals Technologies Germany GmbH, Germany

14:20  Next generation of electrode control systems – first operational results, C. Sedivy, B. Dittmer, R. Krump, C. Koubek, Primetals Technologies, Austria

14:40  SGL PRO ARC – optimal EAF Control, B. Bryant, A. Wyatt, H. Fuchs, SGL Group, Germany

15:00  EAF modernization with increased power input by Primetals Technologies, P. Zipp, Primetals Technologies, Germany

Wednesday, 17 June 2015
16:00-17:00 | Track E | Session 23
Casting – Submerged Entry Nozzle (SEN) and Mold 3
Chairman: C. Bernhard, Montanuniversität Leoben, Austria

16:00  Innovative mold coating technology positively influences strand surfaces, UniGuardTM, O. Wiens, W. Moßner, SMS Siemag AG, Germany, C. Donovan, SMS Millcraft, USA

16:20  Investigation and validation of mould-electromagnetic stirring for continuous casting of round steel blooms, M. Barna, Johannes Kepler University Linz, J. Reiter, voestalpine Stahl Donawitz GmbH, Austria, B. Willers, S. Eckert, Helmholtz Zentrum Dresden Rossendorf, Germany
Wednesday, 17 June 2015
16:00-17:20 | Track F | Session 24
Casting – Product Quality 2
Chairman: C. Tscheuschner, VDEh Betriebsforschungsinstitut GmbH, Germany

16:00 Best quality in stainless steel blooms through the DSR and EMS technology, L. Morsut, E. Franceschinis, M.M. Motta, A. Sgro, Danielli & Co. Officine Meccaniche SpA, C. Scarabelli, Acciaierie Cogne, Italy

16:20 Effect of Mg treatment on inclusion formation and solidification structure in ultra purity ferritic stainless steel, Z. Chen, Y. Xu, Baoshan Iron & Steel Co., Ltd., China


17:00 Danielli Technological Packages, Life cycle partner in Slab Casting, M. Knights, M. Massimo, Danielli & Co. Officine Meccaniche SpA, Italy

Wednesday, 17 June 2015
16:00-17:20 | Track G | Session 25
Electric Steelmaking – Process Control 2
Chairman: B. Kleimt, VDEh-Betriebsforschungsinstitut GmbH, Germany

16:00 Next Generation EF SOP® technology for more complete off-gas analysis, D. Zuliani, V. Scipolo, A. Pal, O. Negru, Tenova Goodfellow Inc., Canada

16:20 Superior flicker reduction with SVC PLUS® – operational experience, B. Dittmer, W. Hörger, Primetals Technologies, Germany, R.-H. Backes, Siemens AG

16:40 Controlling the electric arc properties in an AC EAF at Dörrenberg Edelstahl GmbH, K. Krüger, T. Matschullat, M. Hergt, W. Hartmann, B. Dittmer, A. Döbbeler, Primetals Technologies, F. Stahl, M. Kühnemund, Dörrenberg Edelstahl GmbH, K. Krüger, Max Aicher GmbH & Co. KG, Germany

17:00 LINDARC™ – Laser off-gas analysis system with closed loop control to improve EAF performances, D. Tolazzi, MORE, Italy, O. Milocco, ABS-Acciaierie Bertoli Safau, M. Picciotto, Danielli & C. SpA, Italy
Wednesday, 17 June 2015
16:00-17:20 | Track H | Session 26
Oxygen Steelmaking – Process Optimization, Automation and Monitoring 2
Chairman: M. Schlautmann, VDEh Betriebsforschungsinstitut GmbH, Germany

16:00  Latest innovations of technological automation packages for steelmaking plants, T. Kurzman, A. Rohrhofer, F. Hartl, P. Aufreiter, Primetals Technologies, Austria
16:20  Optimised process control of advanced ladle stirring by online monitoring using digital image analysis techniques, B. Palm, H. Kochner, VDEh Betriebsforschungsinstitut GmbH, C. Schlueter, A. Berghofer, T. Muller, Salzgitter Flachstahl GmbH, Germany
16:40  Tenova’s flexible BF/BOF technologies – designed to produce steel in the most efficient, productive and cleanest way possible, D. Zuliani, Tenova Goodfellow Inc., Canada
17:00  BOF slop detection – savings potential with real-time slop detection & mitigation technology, V. Scipolo, J. Kafie, B. Babaei, Tenova Goodfellow Inc., Canada

Thursday, 18 June 2015
9:00-10:20 | Track G | Session 27
Casting – Technology and Plant Equipment 2
Chairman: G. Kemper, HKM Huettenwerke Krupp Mannesmann GmbH, Germany

9:00  Innovation highlights in continuous casting automation, R. Leitner, W. Oberaigner, Primetals Technologies, Austria
9:20  Beam Blank in submerged pour casting: Danielli technology and experience, A. Sgro, Danielli & Co. Officine Meccaniche SpA, Italy J. Beaton, Danielli Corporation, USA
9:40  Next steps in high speed billet casting at Ege Celik, M.H. Sezar, EGE Celik, Turkey, J. Morton, Primetals Technologies Austria GmbH, Austria, N. Kapaj, Primetals Technologies USA LLC, USA
10:00  Smart modernization makes your slab caster fit for future demands, J. Guttenbrunner, R. Suss, Primetals Technologies, Austria

Thursday, 18 June 2015
9:00-10:40 | Track H | Session 28
Casting – Product Quality 3
Chairman: H. Moser, voestalpine Stahl GmbH, Austria

9:00  Effect of ladle shroud and collector nozzle design on sealing and nitrogen pickup, Q. Robinson, R. Stalter, A. Charnock, R. Maddalena, M. Hughes, K. Wu, Vesuvius, USA
9:20  Carbon pick-up reduction in IF steel en route RH and Continuous Casting, P. Palai, R. Ranjan, P.K. Tripathy, T.K. Roy, V.V. Mahashabde, Tata Steel Ltd., India
9:40  Quantification of martensitic banded microstructure in dual phase steels and its application at ArcelorMittal Dofasco’s No.1 continuous caster, S. Alibeigi, J. Sengupta, E. Biro, ArcelorMittal Global R&D Hamilton, Canada
10:00  Reduction in cast slab discarding by improving mold level control using advanced refractories geometries, J. Richaud, Vesuvius, France, L. Demuner, ThyssenKrupp CSA, A. Carvalho, M. Miranda, Vesuvius, Brazil
Thursday, 18 June 2015
10:20 Latest trends and developments for casting quality steels by non-standard casting processes, S. Michelic, INTECO TBR casting technologies GmbH, Austria

Thursday, 18 June 2015
9:00-10:40 | Track J | Session 29
Electric Steelmaking – Process Automation and Monitoring
Chairman: R. Schweikle, Badische Stahl-Engineering GmbH, Germany

9:00 Enhanced diagnostic capabilities by integration of digital models into a condition monitoring system, A. Haschke, A. Müller, Primetals Technologies, Germany
9:20 Application of monitoring system based on performances indicators - KPI's - and process simulation applied at the EAF process improvement, P. Frittella, A. Ventura, Centro Sviluppo Materiali, L. Angelini, Feralpi Holding S.p.A., Italy
9:40 Process control and optimization through a modular approach to EAF automation: the “Automatic EAF” concept, E. Plazzogna, M. Piazza, Danieli Automation SpA, Italy
10:00 Technological packages for automatic EAF- latest evolution of EAF concept for steel industry, P. Burin, Danieli & Co. Officine Meccaniche SpA, Italy
10:20 Advanced hardware and software to minimize false alarms in EAF water leak detection, D. Zuliani, V. Scipolo, I. Todorovic, M. Luccini, H. Alshawarghi, Tenova Goodfellow Inc., Canada

Thursday, 18 June 2015
10:40-12:40 | Track F | Session 30
Oxygen Steelmaking – Process Modelling and Control
Chairman: K. H. Spitzer, TU Clausthal, Germany

10:40 Latest innovations in converter process modelling, R. Hubmer, H. Kühböck, P. Krzysztof, Primetals Technologies, Austria
11:00 Random vibration analysis: application to structural assessment of basic oxygen furnaces, H. Ghorbani, M. Al-Dojayli, M. Maleki, M. Choy, Hatch Ltd., Canada
11:20 1-Dimensional scrap melting model for steel converter, A. Kruskopf, Aalto University, Finland
12:00 Oxygen converting, LD/BOP, as an object of modelling and simulation for process control and automation, H. Jalkanen, A. Kruskopf, S. Louhenkilpi, Aalto University, Finland
12:20 The importance of i BOF® endpoint control technology for phosphorous control, V. Scipolo, D. Zuliani, Tenova Goodfellow Inc., Canada
Thursday, 18 June 2015
10:40-12:40 | Track G | Session 31
Casting – Technology and Plant Equipment 3
Chairman: G. Kemper, HKM Hüttenwerke Krupp
Mannesmann Gmbh, Germany

10:40 New ACCUOPTIX TM sensor for continuous temperature measurement in the tundish., T. Lehut, Vesuvius, Belgium, A. Dörsel, Brandenburger Elektrostahlwerke GmbH, Germany

11:00 Solutions for efficient modernization of continuous casting machines for billets and blooms, C. Brugger, H. Thöne, A. Pühringer, Primetals Technologies, Austria


11:40 The continuous slab caster in the twenty-first century: classical mechanical engineering virtues combined with state-of-the-art mechatronic approaches, M. Hirschmann, O. Schulz, H. Wahl, J. Guttenbrummer, Primetals Technologies, Austria

12:00 Latest developments in abrasive cutting and grinding of large-scale ingots and forgings, G. Richter, A. Schmuckermayer, A. Zeischka, BRAUN Maschinenfabrik GmbH, Austria

12:20 Economic solution for torch cutting, O. Schwarze, framag Industrieanlagenbau GmbH, Austria

Thursday, 18 June 2015
11:00-12:40 | Track J | Session 32
Electric Steelmaking – Secondary Metallurgy and EAF Fundamentals
Chairman: H. Köchner, VDEh Betriebsforschungsinstitut GmbH, Germany

11:00 Influence of poly-atomic gases on physical properties of the EAF arc plasma, W. Hartmann, T. Matschullat, M. Hergt, Primetals Technologies, Germany

11:20 New approaches for vacuum degassing plants VD / VOD and RH / RH-OB, A. Harter, A. Pezza, J. D. Martinez, Primetals Technologies, Germany

11:40 New ladle metallurgical centre at Metal Ravne, D. Tembergen, T. Eichert, J. Triplat, SMS Mevac GmbH, Germany, S. Petovar, A. Rozman, Metal Ravne, Slovenia

12:00 Optimization of steel cleanliness during secondary steelmaking through simulation approaches, enhanced online monitoring and control, S. Rödl, B. Kleimt, H. Köchner, VDEh Betriebsforschungsinstitut GmbH, H. P. Jung, Deutsche Edelstahlwerke, Germany

12:20 Advanced vision systems to control ladle slag carry-over, M. Görnerup, M. Ek, Metsol AB, Sweden
Thursday, 18 June 2015
11:20-13:00 | Track H | Session 33
Casting – Modelling and Simulation 1
Chairman: H.-J. Odenthal, SMS Siemag AG, Germany

11:20 **Numerical simulation of solidification and resulting strains/stresses in the strand shell for asymmetric casting conditions**, C. Tschueschner, S. Rödl, VDEh Betriebsforschungsinstitut GmbH, Germany

11:40 **Numerical simulations of heat distribution and metal flow in a vertical twin roll strip caster**, A. Pelss, A. Rückert, H. Pfeifer, RWTH Aachen University, Germany

12:00 **Numeric model of an electromagnetic brake influencing the steel flow in a continuous slab caster**, M. Barna, Johannes Kepler University Linz, Austria, B. Willers, S. Eckert, Helmholtz Zentrum Dresden-Rossendorf, Germany


12:40 **Advantages of optimised flow control from ladle to tundish**, B. Heinrich, Stopinc AG/Interstop, Switzerland, G. Hackl, U. Marschall, RHI AG Technology Center, Austria

Thursday, 18 June 2015
13:40-15:00 | Track G | Session 34
Casting – Modelling and Simulation 2
Chairman: A. Rückert, RWTH Aachen University, Germany


14:00 **A new 3D coupled fluid/structure model to simulate the beginning of the slab casting process**, O. Jaouen, F. Costes, P. Lasne, M. Barbelet, TRANSVALOR S.A., France


14:40 **Mathematical model of temperature field and mushy zone position of continuous ingot**, A. Ivanova, IAMM NASU, Ukraine

Thursday, 18 June 2015
13:40-15:00 | Track H | Session 35
Casting – Process Optimization
Chairman: M. Reifferscheid, SMS Siemag AG, Germany

13:40 **Development of a gas-tight slide gate to reduce re-oxidation during steel casting**, F. Hippenstiel, R. Hellermann, N. Hofmann, BGH Edelstahl Siegen GmbH, W. Schönbrenner, P. Seitz, Knöllinger FLO-TEC, Germany
Thursday, 18 June | Session 35 – 36

14:00 Damage mechanisms of continuous caster rolls: from failure analysis to lab investigation, N. Sartori, G. Luvarà, M. Pellizzari, Officine Meccaniche SpA, Italy


14:40 Expert service solutions from one source benefits all plant types, P. Tesè, C. Häusler, SMS Siemag AG, Germany

14:40 Reducing heat losses in everyday melting practice – a case study, M. Grant, P. Blostein, Air Liquide GMS GmbH, Germany, K. Kaiser, Air Liquide Delaware Research Center, USA, S. Kita, N. Oki, Yamato Steel, Japan, H. Hattori, Air Liquide Japan

15:00 Meeting environmental requirements for future production – EAF offgas system modernisation with stepwise implementation for minimum shutdown period, R. Hagemann, T. Rummler, Badische Stahl-Engineering GmbH, M. Marz, Bender Corporation Inc., Germany

Thursday, 18 June 2015
13:40-15:20 | Track J | Session 36
Electric Steelmaking – Environmental Technology
Chairman: C. Günther, Max Aicher GmbH & Co. KG, Germany

13:40 Highly-efficient, environmentally-friendly and safety-oriented modern electric steel making: the SMS group EAF, M. Milocco, M. P. Cudicio, SMS Concast Italia SpA, Italy, J. Bader, T. Germershausen, A. Bergs, SMS Siemag AG, Germany, S. Feldhaus, SMS Concast AG, Switzerland

14:00 Practised energy management of GMH, R. Laermann, H. Schnieders, S. Disselkamp, H. Schliephake, Georgsmarienhütte GmbH, Germany

14:20 New approach on efficient electric arc furnace dedusting, T. Steinparzer, A. Adleff, D. Steiner, A. Brunner, Primetals Technologies, Austria
Rolling Program

- Rolling of Long Products
- Rolling of Flat Products
- Cold Rolling
<table>
<thead>
<tr>
<th>Time</th>
<th>Tuesday: 16 June</th>
<th>Wednesday: 17 June</th>
<th>Thursday: 18 June</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Opening of METEC and 2nd ESTAD 2015</td>
<td>Session 8: 09:00 - Rolling – Hot Strip Rolling 1 (p. 47)</td>
<td>Session 16: 09:00 - Rolling – Hot Strip Rolling 4 (p. 51)</td>
</tr>
<tr>
<td>10:00</td>
<td>Coffee break</td>
<td>Session 9: 09:00 - Rolling – Cold Sheet Rolling &amp; Annealing 1 (p. 47)</td>
<td>Session 17: 09:00 - Rolling – Modelling and Simulation 1 (p. 51)</td>
</tr>
<tr>
<td>11:00</td>
<td>Plenary</td>
<td>Session 10: 11:00 - Rolling – Hot Strip Rolling 2 (p. 48)</td>
<td>Session 18: 09:00 - Rolling – Long Products Rolling 1 (p. 52)</td>
</tr>
<tr>
<td>12:00</td>
<td>Newest Develop. in Processes and Plants for the</td>
<td>Session 11: 11:00 - Rolling – Cold Sheet Rolling &amp; Annealing 2 (p. 48)</td>
<td>Session 20: 11:00 - Rolling – Long Products Rolling 2 (p. 52)</td>
</tr>
<tr>
<td>13:00</td>
<td>Production of Steel</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00</td>
<td>Track J / Room 110 - Session 1: 14:00 Rolling –</td>
<td>Session 12: 13:40 - Rolling – Hot Strip Rolling 3 (p. 49)</td>
<td>Session 21: 11:20 - Rolling – Modelling and Simulation 2 (p. 53)</td>
</tr>
<tr>
<td></td>
<td>Design and Manag. of Mill Ass. 1 (p. 45) 15:00</td>
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<td>15:00</td>
<td>Coffee break</td>
<td>Session 13: 14:00 - Rolling – Cold Sheet Rolling &amp; Annealing 3 (p. 49)</td>
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<tr>
<td>16:00</td>
<td>Session 4: 15:20 - Rolling – Design and Management</td>
<td>Session 14: 15:40 - Rolling – Automation, Control and</td>
<td></td>
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<tr>
<td></td>
<td>of Mill Assets 2 (p. 46) 16:40 Coffee break</td>
<td>Measurements 1 (p. 50)</td>
<td></td>
</tr>
<tr>
<td>17:00</td>
<td>Session 5: 15:40 - Rolling – Plate Rolling 2 (p. 46)</td>
<td>Session 15: 16:20 - Rolling – Cold Sheet Rolling &amp; Annealing 4 (p. 50)</td>
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<td>18:00</td>
<td>Evening Event MS RheinEnergie</td>
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The complete program on your mobile, just scan
Tuesday, 16 June 2015
14:00-15:00 | Track J | Session 1
Rolling – Design and Management of Mill Assets 1
Chairman: U. Stellmacher, Steel Institute VDEh, Germany

14:00  Fatigue assessment of universal cardan joint based on laboratory specimen tests, P. Palma, A. Donadon, G. Tiussi, A. De Luca, Y. Raffaglio, Danielli & Co. Officine Meccaniche SpA, Italy
14:20  Drivetrain studies: modernization solutions tailor-made, K. Lazzaro, F. Benfer, E. Jung, SMS Siemag AG, Germany
14:40  Development of tension leveler for Advanced High Strength Steel (AHSS), H. Uematsu, K. Abe, JP Steel Plantech Co., Japan

Tuesday, 16 June 2015
14:00-15:20 | Track K | Session 2
Rolling – Reheating Furnaces and Reheating
Chairman: N. Cavero, TENOVA Spa, Italy

14:00  Reducing production costs at the hot strip mill by optimization of the heating and cooling procedures of the reheat furnaces, P. van Beurden, P. Put, R. Siebring, F. Beukema, Tata Steel, Netherlands
14:20  Revamping of reheating furnaces, M. Fantuzzi, E. Castellano, Tenova, Italy
14:40  Nonlinear model predictive control “MPC” for slab reheating furnace based on transient numerical model, F. Lawayeb, X. M. Nguyen, A. Mouchette, ArcelorMittal R&D, P. Rodriguez, D. Dumur, Supélec Paris, France

Tuesday, 16 June 2015
14:00-15:20 | Track L | Session 3
Rolling – Plate Rolling 1
Chairman: T. Kiefer, AG der Dillinger Hüttenwerke, Germany

14:00  CMI’s new concept for reheating furnaces to substantially improve energy efficiency and product quality, L. Cioriciu, L. Malpas, CMI, Belgium
14:00  MULPIC® – The most powerful metallurgical tool in modern plate production process, S. Samanta, M. Chalmers, Primetals Technologies, United Kingdom
14:20  Heavy plate mill of Acroni – rolling mill and heat treatment line modernization for a producer of special steel grades, R. Robic, ACRONI d.o.o., Slovenia, G. Horn, SMS Siemag AG, Germany, A. Vaccani, SMS INNSE S.p.A., Italy
14:40  Progressing technology of roller leveler for high strength steel plate, T. Shimamura, T. Aoyama, K. Abe, JP Steel Plantech Co., Japan
15:00  Estimation of the Thickness Asymmetry using Models for the Contour Evolution and Vision-Based Measurements of Plates in Hot Rolling, F. Schausberger, A. Steinboeck, A. Kugi, Vienna University of Technology, Austria, M. Jochum, D. Wild, AG der Dillinger Hüttenwerke, Germany
Tuesday, 16 June 2015
15:20-16:40 | Track J | Session 4
Rolling – Design and Management of Mill Assets 2
Chairman: T. Reichardt, VDEh Betriebsforschungsinstitut GmbH, Germany

- **15:20** Shortening the construction period of the laser beam welder setup, T. Fujii, JFE Steel Corporation, Japan
- **15:40** Elimination of mill chatter vibration in cold rolling – first successful pilot installation, K. Krimpelstaetter, G. Keintzel, C. Pröll, Primetals Technologies, Austria
- **16:00** Chatter engineering study through ODS and FEM, D. Santana, SKF BRAZIL, F. Carvalho, Novelist, Brazil
- **16:20** Danieli Total Asset Management System, A. Donadon, Danieli & Co. Officine Meccaniche SpA, Italy

16:20 Logistics optimization in heavy plate yards, U. Bien, PSI Metals GmbH, Germany, M. C. Van Miegem, H. Denoyelle, M. Messiaen, P. Fagnant, Dillinger France, France

16:40 Through process levelling technologies to meet ever increasing demand for final plate flatness, J. Lee, N. Champion, Primetals Technologies, UK, S. Maillard, S. Samanta, Primetals Technologies, France

17:00 The inverse determination of material parameters for hot plate rolling exclusively from rolling mill data, J. Lohmar, M. Bambach, G. Hirt, RWTH Aachen University, S. Seuren, D. Wild, AG der Dillinger Hüttenerwerke, Germany

Tuesday, 16 June 2015
15:40-17:20 | Track L | Session 5
Rolling – Plate Rolling 2
Chairman: C. von Dungern, Primetals Technologies Germany GmbH, Germany

- **15:40** Mill stand replacement and new automation for special steel plate mill VDM Metals GmbH Siegen, J. Jürging, F. Wahlers, O. Lipka, VDM Metals GmbH, M. Wagener, S. Krämer, SMS Siemag AG, Germany
- **16:00** A plate temperature model used for planning and online adaptation of the roll pass schedule in hot rolling, K. Speicher, A. Steinboeck, A. Kugi, Automation and Control Institute (ACIN) Vienna University of Technology, Austria, D. Wild, T. Kiefer, AG der Dillinger Hüttenerwerke, Germany

16:00 Side trimming process improvement, R. Brion, S. Champeaud, P. Manga, T. Dossah, ArcelorMittal, France

16:20 Improvement of side trimming quality based on use of optical inspection device, H. Hlobil, Primetals Technologies, Austria, N. Doulfis, T. Vallée, A. Nasserian, Arcelor Mittal Lorraine, France

16:40 Tinplate shape quality improvement by Redex tension leveler, F. Puyol, C. Li (contracted), REDEX, France, J. Sasarák, Excellence U.S. Steel Kosice, Slovakia

17:00 Resolving complex shape distortions on 20-high mills rolling narrow, thin gauge strip having an asymmetric transverse thickness profile, M. Zipf, Cold Rolling Technologies, Inc., USA
17:20  **Length cutting optimization for long products**, S. Albers, PSI Metals GmbH, Germany

**Tuesday, 16 June 2015**

17:00-18:20  **Track J | Session 7**  
Rolling Rolls and Roll Technology  
Chairman: H. Uijtdebroecks, CRM Group, Belgium

17:00  **Avoiding work roll mix-up in a hot rolling mill using RFID-technology**, A. Beermann, H. Elfert, ThyssenKrupp Steel Europe AG, S. Hesse, ThyssenKrupp IT Services GmbH, U. Linzer, Corts Engineering GmbH & Co. KG, R. Wieck, Solcon Systemtechnik GmbH, Germany

17:20  **Symmetrical of backup-roll and bearing design for more reliability, safety and efficiency**, K. Roeningh, D. Knie, F. Benfer, SMS Siemag AG, Germany

17:40  **Substitution of hard chrome plating for rolls of skin-pass and temper mills**, J. Crahay, D. Debrabandere, J. Vanhumbeeck, CRM, J. Lesenne, CSNChrome, Belgium, F. Bixquert, F. Jansen, Oerlikon Metco-F, Germany, G. Evans, Sarclad-UK, United Kingdom, R. Bröcking, P. H. Bolt, Tata Steel, Netherlands, J. Bertrandie, H. Dietsch, ArcelorMittal, France

18:00  **Practical results with the next generation eddy current technology for roll inspection systems**, R. Van Kollenburg, E. van den Elzen, S. Mul, LISMAR Engineering B.V., Netherlands

17:20  **Symmetrical of backup-roll and bearing design for more reliability, safety and efficiency**, K. Roeningh, D. Knie, F. Benfer, SMS Siemag AG, Germany

17:40  **Substitution of hard chrome plating for rolls of skin-pass and temper mills**, J. Crahay, D. Debrabandere, J. Vanhumbeeck, CRM, J. Lesenne, CSNChrome, Belgium, F. Bixquert, F. Jansen, Oerlikon Metco-F, Germany, G. Evans, Sarclad-UK, United Kingdom, R. Bröcking, P. H. Bolt, Tata Steel, Netherlands, J. Bertrandie, H. Dietsch, ArcelorMittal, France

18:00  **Practical results with the next generation eddy current technology for roll inspection systems**, R. Van Kollenburg, E. van den Elzen, S. Mul, LISMAR Engineering B.V., Netherlands

**Wednesday, 17 June 2015**

9:00-10:40  **Track J | Session 8**  
Rolling – Hot Strip Rolling 1  
Chairman: T. Reichardt, VDEh Betriebsforschungsinstutit GmbH, Germany

9:00  **Sampling and strapping of high-strength steel grades – new ways in hot-strip logistics**, A. Bergmann, ArcelorMittal Bremen, V. Brück, SMS Logistiksysteme GmbH, Germany

9:20  **AHSS production with Arvedi ESP : a new door of opportunity opens**, B. Linzer, A. Rimnac, S. Bragin, B. Yang Primetals Technologies, Austria


10:00  **Fit for the future: Continuous development of plant and process at Outokumpu Tornio plant**, P. Mure, Outokumpu Stainless Oy, Finland, K.-F. Müller, SMS Siemag AG, Germany

10:20  **New graphitised HSS materials for rolls in finishing stands**, C. Zybill, V. Goryany, M. Neumann, J. Buch, Karl Buch Walzengiesserei GmbH & Co. KG, Germany

**Wednesday, 17 June 2015**

9:00-11:00  **Track K | Session 9**  
Rolling – Cold Sheet Rolling & Annealing 1  
Chairman: H. Buddenberg, C.D. Wälzholz GmbH, Germany

9:00  **New rolling method of reversing cold rolling mill**, Y. Kannaka, T. Kikkawa, JP Steel Plantech Co., Japan
9:20 Comprehensive CFD model toward the optimization of the batch annealing cycle, M. Alharbi, K. Cheema, M. Al-Mojil, M. Zaheer, D. Dinaker, SABIC, Saudi Arabia
9:40 New compact tandem cold mill – All in one solution for efficient cold rolling, T. Bode, R. Holz, C. Schwarz, SMS Siemag AG, Germany
10:00 Optimization of product sequences in continuous strip processing lines, T. Tschapowitz, M. Boeck-Schnepps, Andritz AG, A. Steinboeck, A. Kugi, Vienna University of Technology, Austria
10:20 Future-oriented pass schedule calculation for the cold rolling process, J. Polzer, R. Lathe, VDEh Betriebsforschungsinstitut GmbH, J. Kazmierski, Outokumpu Nirosta GmbH, Germany

Wednesday, 17 June 2015
11:00-12:20 | Track J | Session 10
Rolling – Hot Strip Rolling 2
Chairman: M. Brühl, Salzgitter Flachstahl GmbH, Germany

11:00 ArcelorMittal Indiana Harbor Works – 84" hot strip mill looper upgrade to support line pipe products, W. Umlauf, P. Trippel, L. Campbell, T. Willis, ArcelorMittal, USA
11:20 Thin is beautiful – ESP to further develop the cold band substitute market, A. Jungbauer, Primetals Technologies, Austria

12:00 Next generation strip steering controller using optical measurement of strip alignment for hot finishing mills, M. Kurz, A. Lorenz, A. Maierhofer, Primetals Technologies, Germany, H. Hlobil, Primetals Technologies

Wednesday, 17 June 2015
11:20-13:00 | Track K | Session 11
Rolling – Cold Sheet Rolling & Annealing 2
Chairman: P. J. Mauk, Universität Duisburg-Essen, Germany

11:40 EMG-Vivaldi®: Industrial proof of the new paradigm for strip guiding in furnace atmospheres, A. Flöter, M. Wied, EMG Automation GmbH, Germany
12:00 Process and technologies to anneal current and future AHSS strips, E. Magadoux, D. Delaunay, S. Mehrain, Fives Stein, France
12:20 Cold-strip processing lines for automotive qualities and multi-purpose lines, C. Sachteleben, M. Cottin, F. Brühl, M. Kretschmer, C. Sasse, SMS Siemag AG, Germany
12:40 Advanced transitional system optimizer using model predictive control for continuous annealing, H. Wu, R. Speets, B. van Benschop, P. van Hasselt, J. van der Kooij, Tata Steel, Netherlands
Wednesday, 17 June 2015
13:40-15:20  |  Track J  |  Session 12
Rolling – Hot Strip Rolling 3
Chairman: T. Reichardt, VDEh Betriebsforschungsinstitut GmbH, Germany

13:40 Development of mill setting assisting system for operators in hot strip mill, S. Yanagi, M. Kobayashi, Y. Morimoto, T. Toyoda, Kobe Steel Ltd., Japan, T. Ischikawa, Nagoya University, Japan
14:00 Wedge & Camber control, M. Kurz, R. Döll, Primetals Technologies, Germany, T. Pumhoessel, A. Kainz, K. Zeman, Johannes Kepler University Linz, Austria
14:20 Model based width control in finishing mills, D. Kotzian, W. Tautz, Primetals Technologies, Germany
14:40 Effect of oil film thickness on lubrication property in hot rolling, Y. Matsubara, Y. Kimura, Y. Takashima, N. Nakata, JFE Steel Corporation, T. Hiruta, JFE Techno-Research, Japan
15:00 Enhanced solutions for complex rolling mill modernization projects, K. Pronold, W. Spies, J. Armenat, SMS Siemag AG, Germany

Wednesday, 17 June 2015
14:00-16:00  |  Track K  |  Session 13
Rolling – Cold Sheet Rolling & Annealing 3
Chairman: H. Wu, Tata Steel, The Netherlands

14:00 High productivity in continuous stainless steel strip production with tandem cold mills in 18-HS design – experiences with two mills in operation, R. Holz, M. Haentjes, L. Zwingmann, C. Schwarz, SMS Siemag AG, Germany
14:20 Revolutionary Stainless Steel Production Technology, C. Bartholdt, Andritz Sundwig GmbH, Germany
14:40 Advanced twelve-high mill for high quality foil and strip, K. Uesugi, Kobe Steel Ltd., Japan
15:00 Process model for cold rolling of thin strip and foil with ceramic work rolls, C. Overhagen, P. Maurer, P. J. Mauk, University of Duisburg-Essen, Germany
15:20 Strip flatness tracking in annealing furnace, P. Paquot, CRM Group, P. Dufresne, Arcelor Mittal Liege, Belgium
15:40 New cold rolling complex of Gazi Metal, Turkey – High-end production facility for advanced cold strip applications and dynamic growth, M. Gazioglu, Gazi Metal, Turkey, R. Holz, J. Schanderl, SMS Siemag AG, Germany
Wednesday, 17 June 2015
15:40-17:40 | Track J | Session 14
Rolling – Automation, Control and Measurements 1
Chairman: R. Sievering, VDEh Betriebsforschungsinstitut GmbH, Germany

15:40 Renew automation hot strip mill, G. De Zutter, ArcelorMittal Gent, Belgium
16:00 The real time transformation control at hot strip mill, P. Hunt, Primetals Technologies, United Kingdom, F. Van Den Berg, H. Yang, Tata Steel, Netherlands, A. Pegton, Manchester University, UK
16:20 EMG hotcam: Optical strip position, width and camber measurement in the hot rolling process, M. Arns, EMG Automation GmbH, Germany
16:40 How to meet current and future demands for manifest flatness measurement, L. A. Classon, I. Darmanin, P. Kierkegaard, Shapeline AB, Sweden
17:00 High speed archiving of thickness and profile data in the hot strip mill, C. Burnett, J. Davey, D. Berg, G. Schoeppner, Thermo Fisher Scientific, USA
17:20 New applications of optical length- and diameter measurement of hot material, W. Woeste, H. Mennicken, VDEh Betriebsforschungsinstitut GmbH, Germany

Wednesday, 17 June 2015
16:20-17:40 | Track K | Session 15
Rolling – Cold Sheet Rolling & Annealing 4
Chairman: K. Krimpelstätter, Primetals Technologies Austria GmbH, Austria

16:20 Intensive strip cooling in the cold strip mill with high turbulent and low pressure water pillow cushion technology, B. Vervaet, H. Uijtdebroeck, CRM Group, Belgium, L. Jacobs, Tata Steel IJmuiden, Netherlands
16:40 Confined jet dryer: a definitive answer to solution stain in cold rolling, D. Borlini, Danieli & Co. Officine Meccaniche SpA, Italy
17:00 Flexible lubrication for controlling friction in cold rolling, crucial to be successful for the AHSS Challenge, M. Laugier, M. Tornicelli, J. Cebey, L. Schiavone, ArcelorMittal Global R&D, R. Guillard, ArcelorMittal Mardyck, F. Kop, ArcelorMittal Florange, France, D. Lopez Peris, ArcelorMittal Sagunto, Spain, A. Devolder, ArcelorMittal Gent, Belgium
17:20 New surface finishes for cold rolling mills, R. McWhirter, G. Boselli, M. Cavallari, E. Croci, P. Gaboardi, M. Perassolo, C. Trevisan, Tenova Pomini SpA, Italy
Thursday, 18 June 2015
9:00-10:20 | Track K | Session 16
Rolling – Hot Strip Rolling 4
Chairman: G. Kockelkoren, Tata Steel, The Netherlands


9:20 Rizhao steel counts on Arvedi ESP for high-quality hot-strip production, A. Viehböck, A. Jungbauer, Primetals Technologies, Austria


10:00 USP® technology – A new stage of efficiency and flexibility in thin slab casting and rolling, C. Klein, D. Rosenthal, SMS Siemag, Germany

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Thursday, 18 June 2015
9:00-10:40 | Track L | Session 17
Rolling – Modelling and Simulation 1
Chairman: K. Krimpelstätter, Primetals Technologies Austria GmbH, Austria

9:00 Investigation on friction coefficient behaviour in industrial hot rolling process, Q. T. Ngo, N. Bontems, A. Lamandé, M. Mohammadi Tehrani, J. Pezzana, N. Gilani, ArcelorMittal Global Research and Developement, L. Vanel, ArcelorMittal Florange, France

9:20 Rolling force model for clad rolling of plate, S. Jiao, W. Quansheng, Y. Xiangqian, Baoshan Iron & Steel Co., Ltd., China

9:40 Effect of surface roughness on contact heat transfer in hot working, S. Ueoka, H. Kijima, N. Nakata, JFE Steel Corporation, Japan

10:00 Recent advances on rolling force model – solutions of von Karman equation, R.-M. Guo, Tenova I2S, USA

10:20 Tunnel pickling flow analysis, M. Javurek, R. Aslani, P. Gittler, Johannes Kepler University, K. Krimpelstätter, K. Kofler, Primetals Technologies, Austria
Thursday, 18 June 2015
9:00-10:40 | Track M | Session 18
Rolling – Long Products Rolling 1
Chairman: B. Buchmayr, Montanuniversität Leoben, Austria

9:00 Upgrading of an existing bar mill for SBQ production by retrofitting a high-performance abrasive cut-off machine, G. Richter, A. Zeischka, BRAUN Maschinenfabrik GmbH, Austria, A. K. Chowdhary, N. T. S. Steel Group Public Co., Ltd. (TATA Steel Tailand), Thailand

9:20 Latest improvements in quality and process control of new bar-in-coil lines, C. Fabbro, A. Taurino, Danielli & Co. Officine Meccaniche SpA, Italy

9:40 Perfect SBQ production with optimized machinery design and process parameters of the 3-roll RSB SCS, S. Schwarz, W.-J. Ammerling, S. A. Filippini, Friedrich Kocks GmbH & Co KG, Germany

10:00 New rolling stands for long products rolling mill, M. Tomba, M. Zuccato, A. Fontanini, N. Tomba, PERT, Italy

10:20 The new 4-roll Primetals Technologies sizing mill – the evolution of bar sizing, A. Lainati, M. Langè, A. Nardini, R. Albè, P. Menei, Primetals Technologies, Italy

Thursday, 18 June 2015
11:00 HiPAC – High Performance Automation and Control, L. Faralli, Danielli Automation SpA, Italy

11:20 Process knowhow – the Key to unlocking the mills hidden potential, S. Samanta, T. Pfatschbacher, A. Harvey, Primetals Technologies, United Kingdom

11:40 Trend-setting basic automation solution for rolling mills, A. Mantel, R. Schulz, E. Appostolatos, Primetals Technologies, Germany

12:00 Inline measurement of electromagnetic parameters and their application for characterizing mechanical properties of steel strip with a focus on Har, H. Hlobil, A. Koppler, J. Schröck, Primetals Technologies, Austria

11:00 TEMPCORE, the most convenient process to produce low cost high strength rebars from 8 to 75 mm, J.-F. Noville, Centre for Research in Metallurgy (C.R.M.), Belgium

11:20 PERT tailor-made solutions for the finishing blocks, three different types of blocks for 1- or 2-strand rolling, M. Tomba, M. Zuccato, A. Fontanini, PERT, Italy

11:40 Establishing direct rolling mill, S. Fuchimoto, J. Matsuda, Y. Ootagaki, K. Isogami, Godo Steel, Ltd., Japan

12:00 KOCKS Rotation Mill an innovative elongation method for seamless tubes, J. Surmund, J. von der Heiden, Friedrich Kocks GmbH & Co KG, E. Bartel, Kocks Technik GmbH & Co KG, Germany, P. E. Connell, Kocks Pittsburgh Company, USA

Thursday, 18 June 2015
11:00-12:20 | Track M | Session 20
Rolling – Long Products Rolling 2
Chairman: S. Schwarz, Friedrich Kocks GmbH & Co KG, Germany

11:00 Transient torque measurement, modeling, and effect on drivetrain reliability, J. Del Campo, Regal Beloit, USA, C. Desphande, Regal Beloit, India

11:40 Establishing direct rolling mill, S. Fuchimoto, J. Matsuda, Y. Ootagaki, K. Isogami, Godo Steel, Ltd., Japan

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Thursday, 18 June 2015
11:20-13:00  |  Track L  | Session 21
Rolling – Modelling and Simulation 2
Chairman: R.-M. Guo, Tenova I2S, USA

11:20  New CMI mathematical model to cover any configuration of cold rolling operation, M. Morel, F. Dumortier, CMI, Belgium
11:40  3D simulation system for Benteler Seamless Pipe Mill, V. Collini, A. Danelon, M. Monti, Danieli Automation SpA, Italy
12:00  Pickling tank process: Influence of flow turbulence, M. Javurek, Johannes Kepler University, F. Lengwin, voestalpine, Austria
12:20  Advanced Mathematical Models for Heating and Cooling, F. Gerwin, H. Kehler, D. Schröder, LOI Thermprocess GmbH, Germany
12:40  PROCESS EXPERT – from cost efficient and modular process automation to the expert system, P. Riches, P. Czupryna, Primetals Technologies, USA

Thursday, 18 June 2015
11:20-13:00  |  Track L  | Session 21
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12:40  PROCESS EXPERT – from cost efficient and modular process automation to the expert system, P. Riches, P. Czupryna, Primetals Technologies, USA

13:20  High carbon grades for wire rod lines – the core of Danieli technology, C. Fabbro, M. Cimolino, Danieli & Co. Officine Meccaniche SpA, Italy
13:40  Cold finishing chain track technology – pushing the limits of coil to bar drawing up to 400 m/min, K. Van Teutem, Danieli & Co. Officine Meccaniche SpA, Italy
14:00  Operating achievements of in-line Danieli Rail Head Hardening (RH2) system on 100 m long rails, L. Gori, Danieli & Co. Officine Meccaniche SpA, Italy
14:20 **WINLINK®— innovative concept for direct rolling of bars**, F. Toschi, Primetals Technologies, Italy, G. Hohenbichler, Primetals Technologies, Austria, M. Glathe, Primetals Technologies, Germany

14:40 **World's first application of new idrha+™ rail hardening technology in baogang rail mill**, A. Lainati, F. Pegorin, Primetals Technologies, A. Saccocci, A. Mazzarano, RINA Centro Sviluppo Materiali, Italy, Y. Zou, Y. Wang, Baotou Iron&Steel Co. Ltd, China

15:00 **Processing lines serving high-end steel production for automotive products**, S. Maillard, I. Gael, Primetals Technologies, Austria
Steel Materials and their Application, Surface Technologies

Steel Materials and their Application, Surface Technologies

• Steel Materials and their Application
• Surface Technologies
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<th>Tuesday: 16 June</th>
<th>Wednesday: 17 June</th>
<th>Thursday: 18 June</th>
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<tr>
<td>Room 1 + 2</td>
<td>Track L / Room 110</td>
<td>Track N / Room 5</td>
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<tr>
<td>Opening of METEC and 2nd ESTAD 2015</td>
<td>Session 1</td>
<td>Session 9</td>
</tr>
<tr>
<td>10:00</td>
<td>Steel Materials and their Application – Simulation and Modelling 1 (p. 57)</td>
<td>09:00</td>
</tr>
<tr>
<td>10:20</td>
<td>Coffee break</td>
<td>10:40</td>
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<tr>
<td>11:00</td>
<td>Session 2</td>
<td>11:00</td>
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<tr>
<td>11:00</td>
<td>Steel Materials and their Application – Construction 1 (p. 57)</td>
<td>11:00</td>
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<tr>
<td>11:20</td>
<td>Coffee break</td>
<td>11:00</td>
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<tr>
<td>12:00</td>
<td>Session 3</td>
<td>11:00</td>
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<tr>
<td>12:00</td>
<td>Steel Materials and their Application – Construction 2 (p. 58)</td>
<td>11:00</td>
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<tr>
<td>12:50</td>
<td>Lunch</td>
<td>12:40</td>
</tr>
<tr>
<td>13:00</td>
<td>Session 5</td>
<td>13:00</td>
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<tr>
<td>13:00</td>
<td>Steel Materials and their Appl. – Crane Constr. 1 (p. 59)</td>
<td>13:00</td>
</tr>
<tr>
<td>14:00</td>
<td>Session 6</td>
<td>14:00</td>
</tr>
<tr>
<td>14:00</td>
<td>Steel Materials and their Application – Long Products for Forging Applications (p. 59)</td>
<td>14:00</td>
</tr>
<tr>
<td>15:00</td>
<td>Session 7</td>
<td>15:00</td>
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<tr>
<td>15:00</td>
<td>Steel Mat. and Application – Crane Construction 2 (p. 60)</td>
<td>15:00</td>
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<tr>
<td>16:00</td>
<td>Coffee break</td>
<td>16:00</td>
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<tr>
<td>16:00</td>
<td>Session 8</td>
<td>16:00</td>
</tr>
<tr>
<td>16:00</td>
<td>Steel Mat. and Application – High Temperature Steels for Energy Technology (p. 60)</td>
<td>16:00</td>
</tr>
<tr>
<td>17:00</td>
<td>Session 9</td>
<td>17:00</td>
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<tr>
<td>17:00</td>
<td>Steel Materials and their Application – Simulation and Modelling 2 (p. 59)</td>
<td>17:00</td>
</tr>
<tr>
<td>18:00</td>
<td>Session 10</td>
<td>18:00</td>
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<tr>
<td>18:00</td>
<td>Steel Materials and their Application – Construction 2 (p. 61)</td>
<td>18:00</td>
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<tr>
<td>18:00</td>
<td>Closing</td>
<td>18:00</td>
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<tr>
<td>18:30</td>
<td>Evening Event MS RheinEnergie</td>
<td>18:30</td>
</tr>
</tbody>
</table>

The complete program on your mobile, just scan
### Session 1 – 2

#### Wednesday, 17 June 2015

**Track L | Session 1**

**Steel Materials and their Application – Simulation and Modelling 1**

Chairman: D. Z. Sun, Fraunhofer Institute for Mechanics of Materials IWM, Germany

**9:00**

**FEA-assisted optimization of blanking aimed at damage minimisation at cut edges of dual-phase and complex-phase steel sheets**, I. Peshekhodov, B.-A. Behrens, M. Vucetic, A. Bouguecha, Gottfried Wilhelm Leibniz Universität Hannover, Germany

**9:20**

**Prediction of flatness, phase transformation and temperature distribution during quenching process**, T. Dossah, M. Hamide, A. Baur, ArcelorMittal Global R&D Maizieres Process, France

**9:40**

**Identification of resistance spot welding parameters for ultra-high-strength steels by use of finite element calculations**, F. Schreyer, S. Weihe, Materials Testing Institute (MPA) University of Stuttgart, Germany

**10:00**

**Experimental and numerical simulation of design- and production-related tolerances on the crash behavior of adhesively bonded joints**, G. Schwarzkopf, O. Hahn, G. Meschut, M. Bobbert, Universität Paderborn, A. Matzenmiller, Universität Kassel, Germany

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**Track M | Session 2**

**Steel Materials and their Application – Construction 1**

Chairman: S. Münstermann, Forschungszentrum Jülich, Germany

**9:00**

**New potential applications for rear ventilated claddings by using stainless steel-composite-sheets**, M. Tulke, A. Brosius, M. Schomäcker, J. Watzke, TU Dresden, J. Bach, H. Hachul, FH Dortmund, Germany

**9:20**

**Investigation on the producibility of freeform facade elements made of sheet metal as self-supporting structures by means of incremental sheet forming**, D. Bailly, M. Bambach, G. Hirt, T. Pofahl, G. Della Puppa, M. Trautz, RWTH Aachen University, Germany

**9:40**

**Optimal application of hollow sections and cast steel nodes in bridge buildings with the usage of steel S355 up to S690**, A. Lipp, S. Herion, T. Ummenhofer, Karlsruhe Institute of Technology (KIT), M. Veselcic, KoRoH GmbH Kompetenzzentrum Rohre und Hohl-profile GmbH, R. Dietrich, Büro für Ingenieurarchitektur Dipl.-Ing. Richard J. Dietrich, Germany, A. Nussbaumer, F. Zamir, École Polytechnique Fédérale de Lausanne EPFL, France

**10:00**

**Adhesive bonded tubular cast steel – steel joints in framework structures**, M. Albiez, T. Ummenhofer, Karlsruhe Institute of Technology (KIT), Ö. Bucak, H. Ehard, Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, H. Fricke, B. Mayer, T. Vallée, Munich University of Applied Sciences, Germany

**10:20**

**Fatigue-resistant trusses of circular hollow sections with thick-walled chords**, M. Euler, U. Kuhlmann, S. Bove, University Stuttgart, Germany
11:00  Bonding of thick-walled structural steel in constructions of agricultural and vibrating machines, M. Holstegge, G. Kötting, Labor Werkstofftechnik FH Münster, Germany
11:20  Influence of high frequency hammer peening on the fatigue strength of welded ultra high strength steels, J. Berg, N. Stranghöner, University of Duisburg-Essen, Germany
11:40  Strain-based design criteria for unfired pressure vessels: demonstration of an extended design-by-formulae-procedure, S. Münstermann, Forschungszentrum Jülich, V. Brinnel, S. Schaffrath, W. Bleck, M. Feldmann, RWTH Aachen University, Germany
12:00  Derivation of new, optimized strength criteria for steel components, M. Feldmann, S. Schaffrath, V. Brinnel, S. Münstermann, W. Bleck, RWTH Aachen University, Germany
12:20  Development of efficient design principles for king piles of combined steel piling walls, A. Just, U. Kuhlmann, University of Stuttgart, B. Leitz, TransnetBW
12:40  Applying wear-resistant coatings up to 5 mm thickness of metal-hard material powder mixtures by means of resistance welding, A. Schiebahn, U. Reisgen, RWTH Aachen University, Germany

11:40  Deformation and damage behavior of different steels for automotive application under multiaxial crash loading, D.-Z. Sun, A. Trondl, S. Klitschke, W. Böhme, Fraunhofer Institute for Mechanics of Materials IWM, Germany
12:00  Characterization and modeling of the fracture behavior of spot welded joints in press hardened steels for crash simulation, S. Sommer, S. Burget, Fraunhofer-Institut für Werkstoffmechanik IWM, Germany
12:20  Thermal straightening simulation of welded structures, N. Doynov, C. Kuke, V. Michailov, BTU Cottbus – Senftenberg, Germany
12:40  Simulation-based optimization of the local material state in the field of cyclically highly stressed case hardened construction details with notch eff, J. Hildebrand, U. Gerth, C. Könke, Bauhaus Universität Weimar, Germany
13:00 Development of methods for evaluation of residual stresses in assembly joints of large steel structures, 
N. Friedrich, W. Fricke, Technische Universität Hamburg-Harburg, T. Nitschke Pagel, J. Klassen, J. Hensel, Technische Universität Braunschweig, Germany

Wednesday, 17 June 2015
14:00-15:00 | Track M | Session 5
Steel Materials and their Application – Crane Construction 1
Chairman: S. Olschok, RWTH Aachen University, Germany

14:00 Influence of the weld thermal cycle on residual stress evolution and cold cracking resistance in welded high-strength steel constructions, D. Schröpfer, T. Kannengießer, BAM Bundesanstalt für Materialforschung und -prüfung, Germany

14:20 New evaluation concept for appraisal of mechanical properties in high strength fine grained structural steel weldments based on the temperature-time-c, R. Sharma, U. Reisgen, K. Willms, RWTH Aachen University, Germany

14:40 Laser-GMA-hybrid welding of longitudinally welded large-diameter pipes of grades API-X80 / X100 to increase the toughness and the production efficiency, M. Rethmeier, S. Gook, A. Gumenyuk, Bundesanstalt für Materialforschung und -prüfung (BAM), Germany

14:00-16:00 | Track L | Session 6
Steel Materials and their Application – Long Products for Forging Applications
Chairman: F. Hippenstiel, BGH Edelstahl Siegen GmbH, Germany

14:20 Lightweight forging with long products – possibilities and processes, F. Wilke, Deutsche Edelstahlwerke GmbH, Germany

14:40 Development of an air hardened forging steel with medium manganese content, A. Stieben, W. Bleck, RWTH Aachen University, Germany

15:00 Newly developed high strength steels – meeting the mega trends in automotive industry, O. Rösch, Georgsmarienhütte GmbH, H.-W. Raedt, Hirschvogel Automotive Group, Germany

15:20 High strength bainitic steel 20MnCrMo7, C. Merkel, S. Engineer, EZM Edelstahlzieherei Mark GmbH, Germany

15:40 Improving machinability of continuously cooled non-resulphurized bainitic steels, H. Roelofs, Swiss Steel AG, M. Lembke, Steeltex AG, Switzerland, H. Hartmann, D. Biermann, University of Dortmund, Germany
### Steel Materials and their Application – Crane Construction 2
#### Chairman: M. Rethmeier, BAM Federal Institute for Materials Research and Testing, Germany

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Authors</th>
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<tr>
<td>15:20</td>
<td>Enhancement of the local concept of fatigue assessment of welded crane structures made of high-strength steels in the low cycle fatigue regime</td>
<td>B. Möller, T. Melz, Technische Universität Darmstadt, J. Hrabowski, S. Herion, T. Ummenhofer, Karlsruher Institut für Technologie (KIT), J. Baumgartner, T. Melz, Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkeit LBF, Germany</td>
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<td>16:00</td>
<td>Laser Submerged Arc Welding (LUPuS) – a new method for longitudinal welded pipes</td>
<td>S. Olschok, U. Reisgen, O. Mokrov, O. Engels, S. Jakobs, RWTH Aachen University, Germany</td>
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### Steel Materials and their Application – High Temperature Steels for Energy Technology
#### Chairman: W. Bleck, RWTH Aachen University, Germany

<table>
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<th>Authors</th>
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<tr>
<td>16:20</td>
<td>Extrapolation of creep rupture data with advanced experimental techniques</td>
<td>S. Linn, M. Schwienheer, A. Scholz, M. Oechsner, Technische Universität Darmstadt, Germany</td>
</tr>
<tr>
<td>16:40</td>
<td>Microstructural investigations and numerical tools for improved material characterization</td>
<td>M. Speicher, A. Hobt, A. Klenk, F. Kauffmann, Materials Testing Institute (MPA) University of Stuttgart, Germany</td>
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<td>17:00</td>
<td>Metallic high temperature materials for energy applications – current research activities at BAM</td>
<td>J. Olbricht, A. Kranzmann, B. Skrotzki, Bundesanstalt für Materialforschung und -prüfung (BAM), Germany</td>
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<tr>
<td>17:20</td>
<td>Solarthermic power plants- an application for steel tubings</td>
<td>M. Spiegel, A. Kilic, Salzgitter Mannesmann Forschung GmbH, Germany</td>
</tr>
</tbody>
</table>
Thursday, 18 June 2015
9:00-10:40 | Track N | Session 9
Surface Technologies –
Defect prevention and detection
Chairman: B. Palm, VDEh Betriebsforschungsinstitut GmbH, Germany


9:20  New tools to detect even slight drifts on continuous processing lines, M. Dubois, B. Vanhoutte, CMI Metals, Belgium

9:40  Surface microstructure of normal and defected cold rolled sheet, investigated by SEM/EDS and surface profilometry, R. Smits, B. Smeulders, Quaker Chemical Corp., Netherlands

10:00 Waviness relation with production parameters for automotive product quality improvement, G. Moreas, CRM Group, E. Montagna, Tata Steel SEGAL S.A., W. Bilstein Amepa, Belgium, A. G. Martino, ArcelorMittal, Spain


Thursday, 18 June 2015
9:00-10:40 | Track O | Session 10
Steel Materials and their Application –
High strength Steel 1
Chairman: M. Rethmeier, BAM Federal Institute for Materials Research and Testing, Germany

9:00  Development of a gas based bulge test for the determination of flow curves for hot sheet metal forming processes, A. Braun, G. Hirt, M. Bambach, H. Murrenhoff, J. Storz, RWTH Aachen University, Germany

9:20  Lightweight in agricultural technology through the use of modern high-strength and ultra high strength steel grades, C. Schäfers, M. Thiesing, Hochschule Osnabrück, Germany

9:40  Manufacturing of preholes by cutting for clinching processes and riveting functional elements at super high strength steels, U. Füssel, J. Kalich, TU Dresden, Germany

10:00 New steelgrades and their consequences to the mechanical joining technology, T. Böddeker, W. Flügge, Salzgitter Mannesmann Forschung GmbH, Germany

10:20 Characterization and description of friction conditions for hot stamping and partial hot stamping of ultra high strength steel, P. Schwingenschlögl, S. Hildening, M. Merklein, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
Thursday, 18 June 2015
9:00-10:40 | Track P | Session 11
Steel Materials and their Application – Automotive 1
Chairman: S. Lindner, Outokumpu Krefeld, Germany

9:00 Development of valuation methods and guidelines for adhesive bonding of ZnMgAl-coated steel sheets, M. Ditz, G. Meschut, D. Teutenberg, G. Grundmeier, M. Voigt, C. Kunze, J. Weiss University of Paderborn, Germany


9:40 Complementary approach for the bubble-free seam sealing of bonded hem flanges, I. F. Neumann, H. Fricke, B. Mayer, Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung IFAM, S. Menzel, F. Jesche, D. Landgrebe, Fraunhofer-Institut für Werkzeugmaschinen und Umformtechnik IWU, Germany

10:00 Fixation of bonded multi-material joints of aluminium combined with high strength steel 22MnB5 by a riveting technique, M. Matzke, G. Meschut, O. Hahn, Laboratorium für Werkstoff- und Fügetechnik LWF, Germany

10:20 Design of low temperature cured adhesive joints in steel-FRP constructions under crash loads, K. Henkel, G. Meschut, O. Hahn, Laboratorium für Werkstoff- und Fügetechnik LWF, Germany

Thursday, 18 June 2015
9:00-10:00 | Track R | Session 12
Steel Materials and their Application – Forming and Simulation 1
Chairman: C. Keul, Steel Institute VDEh, Germany

9:00 On the origin of forming related distortion – from hot-rolling and disk forging to case hardening, R. Rentsch, H. W. Zoch, IWT Foundation Institute of Materials Science, Germany

9:20 Improvement of quality control in cold forging of case hardening steels by application of acoustic emission analysis, C. Buse, B.-A. Behrens, A. Santangelo, Institute of Forming Technology and Machines (IFUM) Leibniz Universität Hannover, Germany

9:40 Induction reheating of preforms and flash reduced forging of crankshafts, M. Stonis, J. Langner, T. Blohm, IPH Institut für integrierte Produktion Hannover gemeinnützige GmbH, Germany

Thursday, 18 June 2015
10:40-12:00 | Track R | Session 13
Steel Materials and their Application – Forming and Simulation 2
Chairman: S. Brockmann, Steel Institute VDEh, Germany

10:40 Development of a new advanced draw bead substitution model for FEA-assisted optimisation of deep drawing processes, H. Schulze, B.-A. Behrens, M. Vucetic, J. Schrödter, H. Niemeier, Institute of Forming Technology and Machines Leibniz Universität Hannover, Germany
11:00  Forming behaviour of laser welded tailor welded blanks made out of multi-phase high strength steels – characterisation, modelling, and verification, T. Mennecart, A. Güner, A. E. Tekkaya, Technische Universität Dortmund Institut für Umformtechnik und Leichtbau, Germany


11:00  Optimization of machining processes of high resistant steels for the automotive industry, M. Metzger, H. Abrahamsi, P. Biermann, TU Dortmund University Institute of Machining Technology, Germany

11:20  Development of a test method for determining the cracking susceptibility of resistance spot welded high strength steel sheets, M. Rethmeier, H. Suwala, A. Gumenyuk, Fraunhofer-Institut für Produktionsanlagen und Konstruktionstechnik IPK, Germany

11:40  Investigation of hot crack susceptibility of laser welded joints of four austenitic steels, N. Bakir, A. Gumenyuk, M. Rethmeier, Federal institute for material research and testing (BAM), Germany

12:00  Innovative processing techniques for the manufacture of high-performance active elements from ultra high-strength steel plate, T. Rostek, W. Homberg, Universität Paderborn, Germany

12:20  Ultra Large Container Vessels: Crack Arrestability of Steel Is Required, E. Junghans, O. Doerk, DNV GL AS, Germany

Thursday, 18 June 2015
11:00-12:40 | Track O | Session 14
Steel Materials and their Application – High strength Steel 2
Chairman: A. Fischer, Universität Duisburg-Essen, Germany

11:00  Manganese-Chromium-Steels – new lightweight possibilities for steel applications, S. Linder, Outokumpu Nirosta GmbH, Germany

11:20  Influence of tailored blanks on forming of cold forged functional elements in a sheet bulk metal forming process, D. Gröbel, P. Hildenbrand, U. Engel, M. Merklein, LFT FAU Erlangen-Nürnberg, Germany

11:40  Use of adhesive bonding for car chassis components with new characteristics, C. Schäfers, A. Büscher, O. Wesseling, Hochschule Osnabrück, Germany
12:00 Challenges and chances in continuous annealing of advanced high strength steels, M. Blumenau, A. Bäumer, ThyssenKrupp Steel Europe AG, Germany

Thursday, 18 June 2015
11:20-12:40 | Track N | Session 16
Surface Technologies – Quality Control and Management of Defects
Chairman: K. Peters, ThyssenKrupp Steel Europe AG, Germany

11:20 Quality date management and control, R. Fackert, H. Krauthäuser, IMS Messsysteme GmbH, Germany
11:40 Online quality monitoring of IF- and high strength steel on continuous galvanizing lines controlled by furnace mathematical model, M. Bärwald, EMG Automation GmbH, U. Sommers, M. Biglari, SMS Siemag AG, Germany, W. Beugeling, TATA Steel IJmuiden BV, Netherlands, E. Montagna, TATA Steel SEGAL S.A., A. Lhoest, Drever International S.A., Belgium
12:00 Innovative inspection solution for cold rolling tandem mills, S. Burkhardt, ISRA VISION PARSYTEC, Germany
12:20 Novel Big-Data strategies for the refinement of flat steel quality assessment, J. Brandenburger, VDEh Betriebsforschungsinstitut GmbH, Germany, C. Schirm, J. Melcher, ThyssenKrupp Rasselstein, Germany

13:20 Fatigue of austenitic high interstitial steels, finite and infinite life, A. Fischer, M. Schymura, S. Gueler, Universitaet Duisburg-Essen, Germany
13:40 Technological peculiarities of manufacturing nanobainitic steel plates, B. Garbarz, J. Marcisz, W. Burian, Instytut Metalurgii Żelaza, Poland
14:00 Development of TWIP steel in POSCO, W. T. Cho, K. Geun Chin, S. Kyu Kim, T. Ho Kim, Y. Ha Kim, T. Jin Song, POSCO, South Korea
14:20 Thermo-mechanical treatment and transformation kinetics of bainitic steels with medium carbon content, K. Grzegorz, R. Kawalla, TU Bergakademie Freiberg, B. Hammer, F. Hisker, T. Heller, ThyssenKrupp Steel Europe AG, Germany
Thursday, 18 June 2015
13:20-15:20 | Track R | Session 18
Steel Materials and their Application – Offshore Wind Energy
Chairman: M. Rethmeier, BAM Federal Institute for Materials Research and Testing, Germany

13:20 Qualification of electron beam welding on thick plates for applications in wind energy plant constructions, S. Ufer, U. Reisgen, W. Bleck, S. Olschok, S. Münstermann, G. Golisch, RWTH Aachen University, Germany


14:00 Gain of productivity in processing of heavy walled construction steel and duplex stainless steel with laser beam welding under vacuum, C. Turner, U. Reisgen, S. Olschok, S. Jakobs, RWTH Aachen University, Germany

14:20 Thick-wire GMAW of unalloyed steels, S. Brumm, D. Landgrebe, S. Brumm, R. Agsten, Technische Universität Chemnitz, Germany

14:40 Optimization of supporting structures for offshore wind energy plants, P. Weidner, T. Ummenhofer, Karlsruhe Institute of Technology (KIT), M. Mehdianpour, BAM Federal Institute for Materials Research and Testing, Germany

15:00 Experimental and analytical assessment of the fatigue strength of bolts with large dimensions under consideration of boundary layer effects, R. Eichstädt, P. Schaumann, IFS Leibniz Universität, M. Oechsner, F. Simonsen, MPA/IFW TU-Darmstadt, Germany

Thursday, 18 June 2015
13:40-15:00 | Track N | Session 19
Surface Technologies – Galvanizing and Electro-galvanizing
Chairman: M. Dubois, CMI Metals, Belgium

13:40 NS blade® – advanced air knife for hot dip continuous galvanizing line, H. Kakuno, M. Katsube, M. Ogawa, Nippon Steel & Sumikin Engineering Co. Ltd., Japan

14:00 Cross-strip coating weight control at the hot dip galvanising line of ArcelorMittal Florange, N. Guelton, V. T. Pham, A. Mouchette, ArcelorMittal, France

14:20 Hot Dip Galvanizing Line at ARVEDI producing AHSS over 800 Mpa, F. De Santi, Danieli & Co. Officine Meccaniche SpA, A. Donetti, Danielli Centro Combustion SpA, Italy

14:40 Improved coating range and uniformity via X-JET Air Knife combined with Strip Stabilizer, for lower OPEX production, E. Vettori, G. Caporal, Danielli & Co. Officine Meccaniche SpA, Italy
Thursday, 18 June 2015
13:40-15:00 | Track P | Session 20
Steel Materials and their Application – Automotive 3
Chairman: G. Moninger, Steel Institute VDEh, Germany

13:40 Development of resistance element welding for joining aluminium and fiber-reinforced plastics on steel structures, V. Janzen, G. Meschut, O. Hahn, Laboratorium für Werkstoff- und Fügetechnik LWF, Germany

14:00 Investigation of parameters for the numerical simulation of self-pierce-riveted joints and crash load, D. Hein, G. Meschut, O. Hahn, Laboratorium für Werkstoff- und Fügetechnik LWF, Germany, P. Gumbsch, S. Sommer, M. Bier, Fraunhofer Institute, Freiburg

14:20 Influence of pretreatment technologies as alternatives to zinc phosphating on new and standardized steel substrate surfaces in automotive application, C. Bauder, Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA, Germany

14:40 New light-weight design opportunities and applications for high-strength steels using selective laser melting, B. Buchmayr, Montanuniversität Leoben, Austria
<table>
<thead>
<tr>
<th>Tuesday: 16 June</th>
<th>Wednesday: 17 June</th>
<th>Thursday: 18 June</th>
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<tbody>
<tr>
<td><strong>Room 1 + 2</strong></td>
<td><strong>Track A / Room 26</strong></td>
<td><strong>Room 1</strong></td>
</tr>
<tr>
<td><strong>09:00</strong></td>
<td><strong>10:00</strong></td>
<td><strong>Session 8</strong> 09:00</td>
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<tr>
<td><strong>10:00</strong> Opening of METEC and 2nd ESTAD 2015</td>
<td><strong>10:00</strong></td>
<td>EE Aspects – New and Alternative Technologies (p. 71) 10:00</td>
</tr>
<tr>
<td><strong>11:00</strong> Plenary Sessions 1 and 2</td>
<td><strong>11:00</strong></td>
<td>Coffee break</td>
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<td><strong>12:00</strong></td>
<td><strong>12:50</strong> Lunch</td>
<td><strong>Coffee break</strong></td>
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<td><strong>13:00</strong></td>
<td><strong>Track M / Room 12</strong></td>
<td><strong>12:40</strong> Lunch</td>
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<tr>
<td><strong>14:00</strong> Session 1 14:00 EE Aspects – General Aspects 1 (p. 69)</td>
<td><strong>14:00</strong></td>
<td>EE Aspects – Ener. Savings and Efficiency Optim. 2 (p. 70) 15:00</td>
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<td><strong>15:00</strong></td>
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<td><strong>16:00</strong> Session 2 16:20 EE Aspects – General Aspects 2 (p. 69)</td>
<td><strong>16:00</strong></td>
<td>EE Aspects – Water Cascades and Recirculation (p. 74) 15:20</td>
</tr>
<tr>
<td><strong>17:00</strong></td>
<td><strong>17:40</strong></td>
<td>Room 1: Closing Session: 15:30 Future technology trends and demands for iron and steelmaking processes and steel materials grades 17:00</td>
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<td><strong>18:00</strong> Evening Event MS RheinEnergie</td>
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Tuesday, 16 June 2015
14:00-15:40 | Track M | Session 1
Environmental and Energy Aspects in Iron and Steelmaking – General Aspects 1
Chairman: C. Broadbent, World Steel Association, Belgium

14:00 Energy intensity measurement and benchmarking online system for steel industry, C.-C. Wu, H. Reimink, World Steel Association, Belgium

14:20 Experience with corrosion of high-temperature ceramics in use, S. Otto, W. Adler, B. Stranzinger, VDEh Betriebsforschungsinstitut GmbH, M. Buchwald, R. Buchwald Stahl- und Metallbau, Germany

14:40 Raw materials and technologies for Iron- and Steelmaking under the aspects of the EU low carbon roadmap, T. Buergler, J. Prammer, R. Hackl, voestalpine Stahl GmbH, B. Kohl, voestalpine AG, Austria

15:00 Recent innovations in sustainable pickling technologies for stainless steel, M. Rigamonti, Y. Dermertzis, Henkel Italia s.r.l., Italy

15:20 Process optimization cuts operating costs results of the cooperation between Alfa Acciai and Tenova, D. Masoero, M. Marcozzi, P. Clerici, Tenova SpA, D. Silvestri, G. Fatuzzo, Alfa Acciai, Italy

Tuesday, 16 June 2015
16:20-17:40 | Track M | Session 2
Environmental and Energy Aspects in Iron and Steelmaking – General Aspects 2
Chairman: C. Grip, Luleå University of Technology, Sweden

16:20 The role of steel in the circular economy, C. Broadbent, World Steel Association, Belgium

16:40 The energy saving activities at JFE Steel Corporation West Japan Works, Fukuyama, H. Yamagishi, M. Uno, H. Yamagishi, JFE Steel Corporation, Japan

17:00 Improvement of energy efficiency at Tata Steel IJmuiden, R. Hekkens, T. Rozendaal, G. Jägers, J. Bakker, P. Pronk, H. Kiesewetter, Tata Steel Europe, Netherlands

17:20 Eco-friendly technology in POSCO ironmaking to correspond the atmospheric environmental regulations, H. Kim, S.-M. Kim, J.-W. Jeong, POSCO, South Korea

Wednesday, 17 June 2015
9:00-10:20 | Track N | Session 3
Environmental and Energy Aspects in Iron and Steelmaking – Recycling of Iron and Steelmaking Dust and Sludge and Shredder Residues
Chairman: R. Janjua, World Steel Association, Belgium

9:00 Hydrometallurgical process for recycling Fe / C matrix of blast furnace sludge into the steelmaking route, L. Piezanowski, Raynal, J. Hugentobler, M. Houbart, Paul Wurth S.A., Luxembourg
Wednesday, 17 June | Session 3 – 5

9:20 DRI production from shredder residues, M. Dormann, D. Steyls, V. Piret, B. Vanderheyden, CRM Group, P-F. Bareel, Q. Van Haute, C. Bodson, Comet Traitements, Belgium

9:40 Metallurgical sludge recycling concept, D. Tikhonov, V. Filatov, I. Kurunov, Novolipetsk Steel, A.M. Bizhanov, J.C. Steele& Sons Inc., Russia

10:00 Investigation of applying OxyCup process for an integrated steel plant from a Nordic country, W. Chuan, M. Larsson, Swerea MEFOS, O. Mattila, T. Paananen, J. Lilja, SSAB, Sweden, R. Jennes, Küttner, Germany

Wednesday, 17 June 2015

11:00-12:40 | Track N | Session 4
Environmental and Energy Aspects in Iron and Steelmaking – Energy Savings and Energy Efficiency Optimization 1
Chairman: K. Marx, VDEh Betriebsforschungsinstitut GmbH, Germany

11:00 Optimized energy recovery from BOF cooling stack through dynamic simulation, T. Steinparzer, R. Fillafer, G. Kaltofen, Primetals Technologies, Austria

11:20 Integrated energy recovery and utilization of waste heat for integrated plants and EAF route, P. Trunner, T. Steinparzer, Primetals Technologies, Austria


12:00 Energy network in integrated mills – Reasonable use of by-product gases in the energy network, M. Sprecher, Steel Institute VDEh, M. Baldermann, Hüttenerwerke Krupp Mannesmann, H.-P. Domels, Thyssen Krupp Steel Europe, M. Hensmann, B. Stranzinger, VDEh-Betriebsforschungsinstitut, Germany

12:20 Improvement in energy efficiency of blast furnace, Y. Gordon, Hatch, Canada, N. Spirin, V. Shvidkii, Y. Yaroshenko, UFU, Russia

Wednesday, 17 June 2015

14:00-15:00 | Track N | Session 5
Environmental and Energy Aspects in Iron and Steelmaking – Energy Savings and Energy Efficiency Optimization 2
Chairman: U. Janhsen, ThyssenKrupp Steel Europe AG, Germany

14:00 Economic waste heat recovery for different sinter cooler types, P. Trunner, D. Bettinger, M. Moser, G. Strasser, Primetals Technologies, Austria


14:40 Dispersion and monitoring of fugitive emission from coke oven battery, R. Bigda, J. Telenga-Kopyczynska, A. Sobolewski, Institute for Chemical Processing of Coal, Poland
Wednesday, 17 June 2015  
15:40-17:20 | Track A | Session 6  
Efficiency Increase and CO₂ Mitigation in Iron and Steelmaking – Strategies for Efficiency Increase 1  
Chairman: V. Colla, Scuola Superiore Sant’Anna, Italy

16:00 Low carbon MgO-C refractories for clean steel making in steel ladles, C. Delabaere, M. Sathiyakumar, T. Mahata, S. Hazra, P. B. Panda, TRL Krosaki, France


16:40 Optimising safety and productivity of steel mill operations, S. Haubold, ExxonMobil Fuels & Lubricants, United Kingdom

17:00 Continuous improvements in Industrial Reheating and Heat Treating Furnace combustion systems by Danieli Centro Combustion and Danieli Olivotto Ferrè, E. Mozzi, Danieli Centro Combustion SpA, Italy

16:00-18:00 | Track N | Session 7  
Environmental and Energy Aspects in Iron and Steelmaking – General Aspects 3  
Chairman: R. Hekkens, Tata Steel Europe, The Netherlands

16:00 Autogenous pyrolysis process for efficient production of renewable carbon for the steel industry, A. Deev, J. Donnelly, S. Jahanshahi, J. G. Mathieson, CSIRO, Australia

16:20 Numerical simulation of particle injection into a falling molten steel jet, D. Haubold, R. Schwarze, B. Lychatz, TU Bergakademie Freiberg, Germany

16:40 Danieli’s green steel vision: an environmentally sustainable approach for steel industry development, A. Bertolissio, Danieli & Co. Officine Meccaniche SpA, Italy

17:00 Air quality challenges in the steel industry, Å. Ekdahl, World Steel Association, Belgium

17:20 SAFESTAR – safety improvements in any industrial environment, V. Collini, Danielli Automation SpA, Italy

17:40 Maintenance and reliability as an effective means to maximise profitability, H. Reimink, R. Janjua, World Steel Association, Belgium

Thursday, 18 June 2015

9:00-10:00 | Track S | Session 8  
Environmental and Energy Aspects in Iron and Steelmaking – New and Alternative Technologies  
Chairman: P. Dahlmann, Steel Institute VDEh, Germany

9:00 Ecoplants solutions and energy recovery in steel plants, C. Froehling, K.-P. Hemmling, SMS Siemag AG, Germany

9:20 The circular economy – carbon recycling and the steel industry, A. Fleischanderl, T. Plattner, P. Puschitz, Primetals Technologies
Thursday, 18 June | Session 8 – 11


Thursday, 18 June 2015

9:00-10:40 | Track T | Session 9

Efficiency Increase and CO₂ Mitigation in Iron and Steelmaking – Strategies for Efficiency Increase 2
Chairman: B. Geier, Montanuniversität Leoben, Austria

9:00 Automation solutions for economical and ecological upgrade of steelmaking plants, J. Mellenthin, D. Ehlerl, J. Thomasberger, SMS Siemag AG, Germany
9:20 CO₂ monitoring in the Steel Industry in Germany, M. Sprecher, Steel Institute VDEh, Germany
9:40 Increased energy efficiency by the use of an individual configurable production planning tool, U. Leifgen, C. Grubert, celano GmbH, Germany

10:00 EloHeat™ long – efficient and economic reheating in minimills for long products, D. Schibisch, M. Langejürgen, SMS Elotherm GmbH, Germany, K. von Eynatten, SMS Concast Italia SpA, Italy
10:20 IRONARC: Low carbon and energy efficient ironmaking, M. Imris, B. Heegaard, S. Santén, SCANARC Plasma Technologies AB, Sweden

Thursday, 18 June 2015

11:00-12:40 | Track T | Session 10

Efficiency Increase and CO₂ Mitigation in Iron and Steelmaking – Strategies for Efficiency Increase 3
Chairman: T. Buergler, voestalpine Stahl GmbH, Austria

11:00 Stein Digital Furnace® advanced technology: The lowest energy and emissions reheat furnace in the steel industry, D. Hounliasso, A. Gonzalez, Fives Stein, France
11:20 Managing operational risk using advanced process optimization, J. R. Favilla (Jr.), J. Kalagnanam, IBM, USA
11:40 Benefits of gas purging in EAF with a focus on material efficiency and CO₂ emission reduction, M. Kirschen, K.M. Zettl, RHI AG, Austria
12:00 Experimental ongoing on high temperature electrolysis of molten iron, J.-C. Wiencke, F. Stoesel, H. Lavelaine, ArcelorMittal, C. Petitjean, P. Panteix, C. Rapin, Université de Lorraine, France
12:20 Reduction of the electrical consumption in the hot strip mill, P. Herbosch, ArcelorMittal Gent, Belgium

Thursday, 18 June 2015

10:20-11:40 | Track S | Session 11

Chairman: G. Endemann, Steel Institute VDEh, Germany

10:20 Utilization of siderurgical gases in gas engines for power generation, M. Schneider, St. Schiestl, GE, Austria
Environmental and Energy Aspects

Thursday, 18 June 2015
12:00-13:40 | Track S | Session 12
Environmental and Energy Aspects in Iron and Steelmaking – By-product Management in Iron and Steel Production
Chairman: G. Harp, Harp Process Chemistry Consulting, Germany

10:40 From the fourth hole to the baghouse, heat recovery for the complete EAF waste gas line, R. Granderath, Tenova Metals Deutschland GmbH, Germany

11:00 Modernization of power plant at Raahe steelworks, K. Kinnunen, J. Swanljung, SSAB, Finland

11:20 Optimization of energy flow network in steelmaking process, W.-Q. Sun, C. Jiu-ju, Northeastern University, China

12:00 RecoDust-Process for the recycling of steel mill dusts, B. Geier, H. Raupenstrauch, Montanuniversität Leoben, K. Pliz, voestalpine Stahl GmbH, Austria

12:20 Tinol waste oil internal management at ArcelorMittal Asturias, I. Gonzalez Baquet, J. R. Garcia-Rodriguez, J. M. Gonzalez Toyos, ArcelorMittal Asturias, Spain

12:40 By-products recycling in iron & steel plant – comparison between oily millscale treatments, C. Valentina, I. Matino, E. Alcamisi, G. Filippo Porzio, Scuola Superiore S. Anna, L. Romaniello, F. Rosito, ILVA S.p.A., Italy

13:00 Recycling of ferrous by-products in DRI plants, A. Fleischanderl, J. Schmelberger, CH. Brunner, Primetals Technologies, Austria, A. Röpke, ArcelorMittal Hamburg GmbH, Germany


Thursday, 18 June 2015
13:40-15:00 | Track T | Session 13
Efficiency Increase and CO₂ Mitigation in Iron and Steelmaking – Strategies for Efficiency Increase 4 / Integrated Intelligent Manufacturing (I²M)
Chairman: C. Froehling, SMS Siemag AG, Germany

13:40 A big data approach to optimize energy efficiency in the steel manufacturing, J. Favilla, J. K. W. Hou, IBM, USA

14:00 Integrated intelligent manufacturing and optimization: the hen and the egg, C. Pietrosanti, Italy, V. Colla, Scuola Superiore S. Anna, Italy, H. Peters, BFI-Betriebsforschungsinstitut, Germany

14:20 Raising economic efficiency of steel products by a smart re-allocation respecting different process routes, M. Neuer, A. Ebel, A. Wolff, VDEh Betriebsforschungsinstitut GmbH, M. Roessiger, Siemens, Germany, F. Marchiori, Centro Sviluppo Materiali, Italy, G. Mathis, ArcelorMittal, France, N. Matskanis, CETIC, Belgium

14:40 Mission smart steelmaking processes, M. Brummeyer, S. Fuchshumer, voestalpine Stahl GmbH, Austria, C. Kittl, evolaris next level, Austria
Thursday, 18 June 2015
14:20-15:20 | Track S | Session 14
Environmental and Energy Aspects in Iron and Steelmaking – Water Cascades and Recirculation
Chairman: J. Wiencke, ArcelorMittal, France

14:20 Efforts for cooling water saving in a steelmaking facility, S. Cattarino, M. Sandro, C. Marco, PERT, Italy

14:40 Evaluation of water blowdown reuse in integrated steelworks through process simulation, I. Matino, V. Colla, E. Alcamisi, G. F. Porzio, Scuola Superiore Sant'Anna, L. Romaniello, F. Rosito ILVA S.p.A., Italy

15:00 Advanced water treatment plant design with “Zero Liquid Discharge” recovery system technology, A. Nardella, Danieli & Co. Officine Meccaniche SpA, Italy
Thursday, 18 June 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Track A (Room 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:30 - 17:00</td>
<td><strong>Round table discussion on: Future technology trends and demands for iron and steelmaking processes and steel materials grades</strong></td>
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- **Moderation:** **Dr. Herbert Eichelkraut**, Member of the Executive Board, ThyssenKrupp Steel Europe, Germany
- **Prof. Dr. Wolfgang Bleck**, Head of Department of Ferrous Metallurgy, RWTH Aachen, Germany
- **Prof. Dr. Bruno Buchmayr**, Chair of Metal Forming, Department Product Engineering, University Leoben, Austria
- **Dr. Peter Dahlmann**, Executive Member of the Managing Board, Steel Institute VDEh, Germany
- **Philippe Darmayan**, President Fédération Française de l´Acier (FFA), President of ArcelorMittal France
- **Dr. Bruno Hribernik**, Executive Member of the Managing Board, Austrian Society for Metallurgy and Materials (ASMET), Austria
- **Hans Jürgen Kerkhoff**, Chairman Steel Institute VDEh, President German Steel Federation, Germany
- **Prof. Dr. Carlo Mapelli**, President Associazione Italiana di Metallurgia (AIM), Italy
- **Prof. Dr. Johannes Schenk**, Chair of Iron and Steel Metallurgy, University Leoben, Austria

**Preview to 3rd ESTAD 2017 in Austria, Dr. Bruno Hribernik**, Austrian Society for Metallurgy and Materials (ASMET)
Works visits

Conference participants are offered works visits scheduled to take place directly after the Conference. Information and explanations during the plant tours will be provided in English. Transportation to the various plants will be by bus from the Congress Center Düsseldorf CCD South. Detailed information material will be distributed together with the Conference documents. Participation on these tours must be booked along with the registration for the Conference and the fees have to be paid together with the Conference fees. In required cases, return via Rhein-Ruhr-Airport Düsseldorf will be offered, arrival times are due to the traffic situation.

Please note that the number of places for the works visits is limited and will be offered on a first come, first served basis.

Works visit No. 1: Coke plant Prosper of ArcelorMittal
Location: Prosperstraße 350, 46238 Bottrop, Germany

Start up 1985/1989; 3 batteries with 146 coke ovens; oven dimension: 16.3 m length, 7.1 m height, 0.59 m width; capacity: 2.0 mill t coke/a

Schedule:
09:00  Departure by bus from CCD South
10:00  Welcome and introduction to coke plant Prosper
11:00  Plant tour to coke plant
12:30  Business lunch
13:30  Departure
14:30  Arrival at CCD South

Number of participants: max. 25
Fee: 70 € per person

Works visit No. 2: Coke plant Schwelgern of Pruna on the site of ThyssenKrupp Steel Europe AG
Location: Alsumer Steig 100, 47166 Duisburg, Germany

Start up 2003; 2 batteries with 140 coke ovens; oven dimension: 20.8 m length, 8.43 m height, 0.59 m width; capacity: 2.6 mill t coke/a

Schedule:
09:00  Departure by bus from CCD South
10:00  Welcome and introduction to coke plant Schwelgern
10:45  Plant tour to coke plant
12:30  Business lunch
13:30  Departure
14:30  Arrival at CCD South

Number of participants: max. 25
Fee: 70 € per person

Works visit No. 3: ThyssenKrupp Steel Europe AG
Location: Kaiser-Wilhelm-Str. 100, 47166 Duisburg, Germany

Visit:
Sinter plant Schwelgern 3: Start-up 1970; last modernisation 2002; suction area 444 m²
**Blast Furnace Schwelgern No. 2**: First blow-in in 1993, last relining 2014; 14.9 m hearth diameter; 4769 m³ working volume; coal injection

**Basic Oxygen Furnace Shop Bruckhausen**
First start 1969, last modernization 2014, 2 BOF 380 t

**Continuous slab caster Bruckhausen**:
Slab caster 1: Start-up 1979; last modernisation 1996; 2 strands; slab size: 215 mm thickness, 1800 – 2600 mm width

**Thin slab caster 2**: Start-up 1999; 2 strands; slab size: 48 – 63 mm thickness, 900 – 1600 mm width

**Hot strip mill Beeckerwerth 2**
Start up 1964, type CSP-HSM, strip size thickness x width 1-12.7 x max 1600 mm

**Schedule**:
08:30  Departure by bus from CCD South
09:30  Welcome and introduction to ThyssenKrupp Steel Europe
10:00  Visit to blast furnace sinter plant Schwelgern 3 and blast furnace Schwelgern 2
11:30  Visit to BOF and continuous slab caster Bruckhausen
13:00  Light business lunch
14:30  Visit to hot strip mill Beekerwerth
16:00  Departures
17:00  Arrival at CCD South
   (way via Düsseldorf Airport possible if requested)

Number of participants: max. 50
Fee: 100 € per person

**Works visit No. 4**: Hüttenwerke Krupp Mannesmann GmbH
Location: Ehinger Str. 200, Tor 1, 47259 Duisburg, Germany

**Visit**:
**Coke plant**: Start-up 1984/2014; 2 batteries; 140 coke ovens; oven dimension: 18 m length, 7.85 m height, 0.55 m width; capacity: 2.32 mill t coke/a

**Sinter plant 1**: Start-up 1972; last modernisation 2001; suction area 420 m²; capacity: 6.0 mill t sinter/a

**Blast furnace A**: First blow-in 1973; last relining 2009; 10.3 m hearth diameter; 2449 m³ working volume; coal injection; capacity: 2.5 mill t hot metal

**Basic Oxygen Furnace Shop**
First start 1966, last modernisation 1983, 2 BOF 275 t, capacity 5.67 mill t crude steel/a

**Continuous bloom caster**:
**Bloom caster 1**: Start-up 1981; last modernisation 2002; 6 strands; bloom diameter: 180 – 240 mm; capacity: 1.4 mill t/a
**Bloom caster 2**: Start-up 1984; 5 strands; bloom diameter: 180 – 406 mm; capacity: 1.2 mill t/a
Continuous slab caster:

**Slab caster 1:** Start-up 1967; last modernisation 2013; 4 strands;  
slab size: 260 mm thickness, 325 – 675 mm width;  
capacity: 0.96 mill t/a  
**Slab caster 2:** Start-up 1967; last modernisation 2006; 2 strands;  
slab size: 260 mm thickness, 800 – 1200 mm width;  
capacity: 1.8 mill t/a  
**Slab caster 3:** Start-up 2000; 2 strands; slab size: 260 mm thickness,  
850 – 2100 mm width; capacity: 3.0 mill t/a

**Schedule:**

08:30  Departure by bus from CCD South  
09:00 Welcome and introduction of Hüttenwerke Krupp Mannesmann GmbH  
09:45 Visit to coke plant  
10:45 Visit to blast furnace A and sinter plant 1  
12:30 Light business lunch  
13:35 Visit to continuous casting plant  
15:00 Departure  
16:00 Arrival at CCD South  
(way via Düsseldorf Airport possible if requested)

Number of participants: max. 50  
Fee: 100 € per person

Basic Oxygen Furnace Shop:
First start 1968, last modernisation 2011, 2 BOF 290 t,  
capacity 3.7 mill t crude steel/a

Hot strip mill:  
Start up 1973, last modernisation 2008, strip size thickness x width 1.5-28.3 x 2150, capacity 4.9 mill t strip/a

**Schedule:**

07:00  Departure by bus from CCD South  
10:00 Welcome and introduction of ArcelorMittal Bremen  
11:00 Visit to blast furnace 2, Basic Oxygen Furnace Shop and Hot strip mill  
13:30 Light business lunch  
14:30 Departure  
17:30 Arrival at CCD South  
(way via Düsseldorf Airport possible if requested)

Number of participants: max. 25  
Fee: 100 € per person

Works visit No. 5: ArcelorMittal Bremen GmbH
Location: Carl-benz Straße 30, 28237 Bremen, Germany

**Blast furnace No. 2:** First blow-in 1973; last relining in 1999;  
hearth diameter 12.0 m; working volume 3143 m³;  
capacity: 2.53 mill t HM/a

Visit:

**Sinter plant:** 3 strands; start-up 1956/1960/1963; last modernisation 1998; 90 m² and 2 x 132 m²; capacity: 4.4 mill t sinter/a

**Blast furnace No. 6:** First blow-in 1967; last relining in 2002; hearth diameter 11.0 m; working volume: 2328 m³, capacity: 2.77 mill t/a; coal injection
Blast Furnace No 7: First blow-in 1972; last relining in 2006; hearth diameter 13.83 m; working volume: 3775 m³; capacity: 3.54 mill t/a; coal injection

Basic Oxygen Converter Shop:
1968/1976, last modernisation 2003, 3 BOF 330 t, capacity 7.2 mill t crude steel/a

Continuous slab caster:
Slab caster 1: Start-up 1980; last modernisation 2006, slab size: 190 – 225 mm thickness, 950 – 1950 mm width; capacity: 2.9 mill t/a
Slab caster 2: Start-up 1986; last modernisation 2004; slab size: 225 – 225 mm thickness, 950 – 2150 mm width; capacity: 3.0 mill t/a
Slab caster 3: Start-up 2000; slab size: 70 – 70 mm thickness; 750 – 1560 mm width; capacity: 1.3 mill t/a

Schedule:
07:00 Departure by bus from CCD South
10:00 Welcome and introduction of Tata Steel IJmuiden B.V. at the Dudok Huis Conference Center in IJmuiden
10:30 Visit to sinter plant
11:15 Visit to blast furnace 6 and 7
12:30 Return to Dudok Huis Conference Center for light business lunch
13:15 Departure to BOF and continuous casting plant
14:45 Return to Conference Center Dudok Huis and have a refreshment
15:00 Departure
18:00 Arrival at CCD South
(way via Düsseldorf Airport possible if requested)

Number of participants: max. 50
Fee: 100 € per person

Works visit No. 7: DK Recycling und Roheisen GmbH
Location: Werthauser Straße 182, 47053 Duisburg, Germany

This small plant is specialised in processing steel works recycling materials to produce foundry iron and zinc.

Sinter plant No. 1: Start-up 1981; last modernisation 1998; suction area 60 m²; capacity: 0.5 mill t sinter/a

Blast furnace No. 3: First blow-in 1974; last relining 2011; hearth diameter 5.5 m; working volume: 580 m³; capacity: 0.3 mill t foundry iron/a

Schedule:
09:00 Departure by bus from CCD South
10:00 Welcome and introduction to DK Recycling and Roheisen
10:15 Visit to sinter plant No. 1 and blast furnace No. 3
12:30 Light business lunch
13:30 Departure
14:30 Arrival at CCD South
(way via Düsseldorf Airport possible if requested)

Number of participants: max. 25
Fee: 50 € per person
Works visit No. 8: Georgsmarienhütte GmbH
Location: Neue Hüttenstrasse 1, 49124 Georgsmarienhütte, Germany

Visit:
DC Electric arc furnace:
Start up 1994, last modernisation 2009, 140 t,
capacity 1.0 mill t crude steel/a

Continuous bloom caster:
Start up 1987, last modernisation 2008, capacity 0.95 mill t/a

Medium section mill:
Start up 1962, last modernisation 2012, section size height min – max
20.5 – 126 mm; capacity 0.8 mill t/a

Schedule:
08:00  Departure by bus from CCD South
10:30  Welcome and introduction of Georgsmarienhütte
11:00  Visit to electric arc furnace
12:30  Light business lunch
14:00  Visit to continuous bloom caster
15:00  Visit to medium section mill
16:00  Departure
18:30  Arrival at CCD South
       (way via Düsseldorf Airport possible if requested)

Number of participants: max. 40
Fee: 100 € per person
Evening event / Conference dinner
Panorama view of Düsseldorf / Large-scale outdoor patio

Tuesday, 16 June 2015, 18:30 – 23:00

MS RheinEnergie: the superlative on the Rhine

All conference participants will have the opportunity to join the conference dinner on the river boat MS RheinEnergie. There is no doubt that MS RheinEnergie is the leading event ship in Europe, setting benchmarks in innovation. Many spectacular events have taken place on board. Even Pope Benedict XVI chose the ship in summer 2005 to greet from the sundeck the thousands of pilgrims gathered on the banks of the Rhine for World Youth Day. The event ship, built in 2004, surpasses with its central inside stage all expectations of a conventional ship and provides extraordinary possibilities.
Seminar: Valorisation and dissemination of EAF technology – VALEAF

Project funded by the Research Fund for Coal and Steel (RFCS)

The dissemination project VALEAF intends to valorise and disseminate the most important results obtained in RFCS research projects on EAF technology with direct benefits for the European Steel Industry. Objectives of the project are to promote the knowledge derived from the European projects in this sector, to supply guidelines for future developments in EAF technologies, to give indications on priorities for future research subjects and to suggest a clear road map for the technological development in this field.

In the frame of a number of seminars and workshops held across Europe, a seminar with the topic

**Sensors and measurement techniques for monitoring and control of the EAF process**

will be held at

**Steel Institute VDEh,**
**D-40237 Düsseldorf,**
**Sohnstrasse 65**

(Date: 19.06.2015, Time: 09:00 – 15:00)

(8 lectures from experts in the field and time for discussion on the topic)

The participation is free of charge.

Please register until the **29th of May 2015** via mail to VALEAF@bfi.de
The number of participants is limited to 120. Interested persons should register as early as possible.

For more information on VALEAF please visit also the official Web Site:
www.c-s-m.it/en/about_us/project_financing/european_projects/valeaf.html
Registration and Get-together
Monday evening, 15 June,
17:00 – 20:00
18:00 – 21:00, in the CCD South in Düsseldorf. There will be entertainment and a finger buffet. Accompanying persons are also welcome free of charge.

Address
Congress Centre South
Stockumer Kirchstr. 61
40474 Düsseldorf, Germany
Layout of CCD South / Ground Floor

Entrance

CCD Süd

Foyer

Foyer

VIP

Garten-Lounge

Business-Lounge

02

01

Steelmaking

Cloakrooms and counters
Registration fees

The registration fee is (exempt from VAT according to § 4 Absatz 22 UStG):
Regular attendees: € 980 (after 15 May € 1080)
Personal VDEh members: € 900 (after 15 May € 1000)
Speakers/Chairman/University employees/Students: € 650

The registration fee includes:
Admission to the sessions of METEC and 2nd ESTAD. Electronic Proceedings with all written manuscripts available (excluding Opening Session). Lunch and all coffee breaks on booked conference days. Invitation to the Get together and Evening Event. Permanent ticket for the METEC, GIFA, THERMPROCESS and NEWCAST trade fair exhibitions, which includes all local transport systems within the greater Düsseldorf area (VRR Rhine-Ruhr Regional Transport Network fare zone) between 15 – 19 June 2015.

Conference participants applying for personal membership of the Steel Institute VDEh can take advantage of the reduced Conference fee. The current annual membership fee is € 46. (Visit www.stahl-online.de)

Program changes

Changes in the program are possible. The Steel Institute VDEh is not responsible for speaker cancelations and presentations and will not reimburse for any cancelations.

Conference office / Registration:
Monday, 15 June 17:00 – 20:00
Tuesday, 16 June 8:00 – 18:30
Wednesday, 17 June 8:00 – 18:30
Thursday, 18 June 8:00 – 18:00

Important information concerning participation in the Conference
Your registration will be confirmed via e-mail. Please present your letter of confirmation or e-mail when registering at the Conference office. Please note that participation is only granted if payment has been received.

Services / Hotel services
We offer you special rates. Please look at the conference website www.metec-estad2015.com to benefit from the special contingent. Due to the limited number of rooms around Messe Düsseldorf, please book your room as early as possible.

Services / How to get there
The Congress Centre Düsseldorf CCD South at the Düsseldorf Exhibition Centre is easy to access by car, air and rail.
Registration

Registration at the conference office – office hours:
Monday, 15 June 17:00 – 20:00
Tuesday, 16 June – Thursday, 18 June starting 08:00

How to get to CCD South

By car
North Rhine-Westphalia has a closely-woven autobahn (freeway) network where almost all routes lead to Düsseldorf and the Trade Fair Centre. You can’t really go wrong – especially as Messe Düsseldorf is clearly signed wherever you look. Just follow the marked routes and in no time you’ll reach the two main car parks (P1 and P2). From there it’s just a short (and free) shuttle-bus ride to the entrances.

On the map you’ll find us on the right side of the Rhine, directly accessible via the A3 and A44 motorways.

By air
The airport is located just three kilometres from the Düsseldorf trade fair centre. You can reach our trade fairs in a matter of minutes by taking the no. 896 bus or a taxi. From the airport, you can also travel quickly and conveniently to Düsseldorf’s city centre and your hotel. Further information about Düsseldorf airport is also available on the website www.Düsseldorf-international.de.

Airport Information: +49 211-421-0
Airport Police: +49-211-421-2266
By train
The central railway station at Konrad-Adenauer-Platz is located right in Düsseldorf’s city centre and is one of the most cutting-edge facilities in Europe. There, you’ll find a Messe Düsseldorf information desk, open for business during most trade events. Our friendly staff will be happy to help with any questions you might have. During events, buses and subway trams travel between the station and the Trade Fair Centre at frequent intervals. The trip by subway tram lines U78 and U79 takes about 15 minutes. More than 1,000 trains stop in Düsseldorf every day, so you’re sure to find your ideal connection. For information, please contact Deutsche Bahn AG on +49 180/599-6633 (across Germany) or consult its online schedule information service www.bahn.de

Parking
Visitor and participant parking is available at two main car parks (P1 and P2). From there it’s just a short (and free) shuttle-bus ride to the entrances.
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