



STEEL'S PREMIER TECHNOLOGY EVENT

# AISTech<sup>®</sup> & ICSTI

4-7 MAY 2015  
CLEVELAND CONVENTION CENTER  
CLEVELAND, OHIO, USA



AISTech<sup>®</sup>  
& ICSTI **TRUCK GIVEAWAY**

See page 253 for  
more information.

Today's **Challenges.** Tomorrow's **Opportunities.**



# AISTech<sup>®</sup> & ICSTI

The World's Largest Annual  
Steel Conference and Exposition

## TECHNICAL CONFERENCE

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See the latest technology and industry processes up close with tours of:

- ArcelorMittal Cleveland
- Charter Steel – Cleveland
- TimkenSteel Corp. – Faircrest Plant

Plant tours typically sell out, so reserve your spot early.



Register by 13 April 2015  
and save up to US\$100 on  
full conference or one-day  
registration.

## REGISTRATION

Full Conference Member **US\$650**  
Non-Member **US\$850\***

One-Day Conference Member **US\$475**  
Non-Member **US\$675\***

Exposition Only Member **FREE**  
Non-Member **US\$50**

*\*Includes AIST membership*

# EXPOSITION

## 500+ Exhibitors

With 245,000 sq. ft. (22,760 m<sup>2</sup>) of exhibit space, AISTech 2015 is your opportunity to develop your contacts and promote your business with the individuals who specify, purchase, design, and operate a variety of plants and facilities all over the world. Contact [sales@aist.org](mailto:sales@aist.org) to reserve your exhibit space and sponsorships today.



## Lodging

AIST has reserved a block of rooms at several hotels in downtown Cleveland. We strongly encourage you to reserve your hotel room well in advance. *The block sells out quickly!* **Reserve your room today at [AISTech.org](http://AISTech.org).**

# NETWORK

## 8,000 Global Industry Professionals

Strengthen your network by interacting with your steel industry peers during AISTech's numerous events, programs and exposition.



## Visas

AIST provides letters of invitation to registered international attendees and exhibitors. Visit the Housing & Travel page at [AISTech.org](http://AISTech.org) to request a letter of invitation.

# ICSTI 2015

## The 7th International Congress on the Science and Technology of Ironmaking

ICSTI 2015 will be co-located with AISTech 2015 and will provide an opportunity for attendees to learn about and debate essential issues and challenges in ironmaking.



## EXPO HOURS

### Monday, 4 May

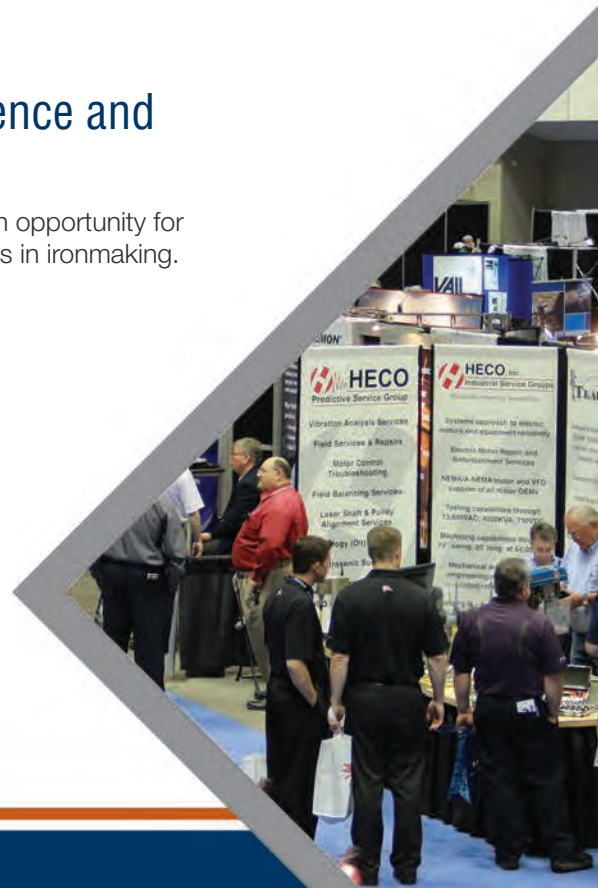
Show Floor: 9 a.m.–6 p.m.  
Welcome Reception: 5–6 p.m.

### Tuesday, 5 May

Show Floor: 9:30 a.m.–6 p.m.  
Reception: 5–6 p.m.

### Wednesday, 6 May

Show Floor: 11 a.m.–3 p.m.



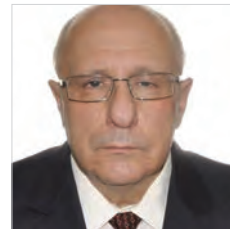
#AISTech

# HOWE MEMORIAL LECTURE

Monday, 4 May • 8–9 a.m.

The Howe Memorial Lecture was established in 1923 to honor Henry Marion Howe, who helped turn steelmaking from an art into a science with his gift of observation and deduction. The lecturer is selected in recognition of outstanding individual contributions to the science and practice of iron and steel metallurgy or metallography. The 2015 Howe Memorial Lecturer is **Dr. Yakov Gordon**, technical director, ironmaking, Iron and Steel Business Unit, Hatch Associates Ltd.

His lecture is titled “**The Role of Engineering Consultancy in the Transformation of a Technology Idea to a Working Process Plant.**” The Howe Memorial Lecture is open to all attendees.



 **HATCH™**

# PRESIDENT'S AWARD BREAKFAST

Tuesday, 5 May • 8–9:45 a.m.

Recognizing steel industry excellence, the President's Award Breakfast program will consist of the presentation of prestigious Board of Director Awards, including AIST's Steelmaker of the Year, followed by a keynote presentation by **Lourenco Goncalves**, chairman, president and chief executive officer, Cliffs Natural Resources Inc.

The breakfast will be held on Tuesday, 5 May 2015 from 8 to 9:45 a.m. Tickets can be purchased when you register for AISTech. Advance single tickets are US\$40, and a table of 10 is US\$350.



 **CLIFFS**

# TOWN HALL FORUM

Wednesday, 6 May • 8:30–11:15 a.m.

The Town Hall Forum provides an insider's view into today's business climate from the people who know: a panel of respected leaders from some of the steel industry's best-regarded companies. The Town Hall Forum's moderated discussion format gives attendees a deeper understanding of the factors that help determine the direction of not just an individual company, but also the greater steel industry.

The Town Hall Forum is open to all exhibitors, students, all full conference registrants and those who have purchased a one-day conference registration for Wednesday, 6 May 2015.

# PLANT TOURS

Thursday, 7 May

## ArcelorMittal Cleveland • 7:30 a.m.–Noon



ArcelorMittal

ArcelorMittal Cleveland is recognized as one of the most productive integrated steelmaking facilities in the world, producing one ton of steel for slightly more than one worker hour. Part of the world's leading steel and mining company, the Cleveland facility is the company's third largest in the United States. Employing approximately 1,900 employees, the facility is strategically located on the Cuyahoga River in Cleveland, Ohio, USA, with access to the Port of Cleveland and Great Lakes shipping, as well as excellent highway and railroad transport. The plant operates two blast furnaces which can feed two steelmaking facilities capable of producing 3.8 million tons of raw steel annually. It consists in large part of the former LTV and Republic Steel plants and has stood on this site since 1913 on the East Side (Corrigan McKinney Steel) and 1914 on the West Side (Otis Steel) of the river. In recent years, ArcelorMittal Cleveland has become a global center of excellence in producing advanced high-strength steel for the automotive industry. Products made at this location are hot rolled, cold rolled and hot-dip galvanized sheet and semi-finished (slabs). Markets this plant serves include automotive, service centers, converters, plate slabs and tubular applications.

## Charter Steel – Cleveland • 7:30 a.m.–Noon



Charter Steel is a producer of high-quality carbon and alloy steel rod, bar and wire. It has melting, rolling and processing facilities located in Wisconsin and Ohio. The company employs a high-service model and continuous improvement to serve customers in mobile and construction-related industries. Charter Steel's Ohio melting and rolling facilities are located in Cuyahoga Heights, approximately 10 minutes from downtown Cleveland. This site utilizes state-of-the-art technology in equipment and manufacturing systems to optimize steel cleanliness, precision rolling tolerances and coil handling. This has allowed Charter Steel to provide customers a superior product that can be utilized in the most demanding of applications.

## TimkenSteel Corp. – Faircrest Plant • 7:30 a.m.–2 p.m. TIMKENSTEEL



TimkenSteel creates tailored steel products and services for demanding applications, helping customers push the bounds of what's possible within their industries. The company reaches around the world in its customers' products and leads North America in large alloy steel bars (6+ inches) and seamless mechanical tubing made of its special bar quality steel, as well as supply chain and steel services. At the Faircrest Plant, TimkenSteel develops some of the strongest alloy steels in the world. The plant's 450-acre site near Canton, Ohio, USA, houses individual steelmaking, ingot and continuous casting and steel-processing facilities. The plant's new jumbo bloom vertical caster is the biggest continuous vertical bloom caster globally and the only one of its kind in North America. The caster uses an optimized tundish design and advanced clean steelmaking technology to help create answers to customers' toughest engineering challenges.



Corporate Sponsors



# 2015 GOLF CLASSIC

Sunday, 3 May

## Firestone Country Club

Situated on the outskirts of Akron, Ohio, Firestone Country Club has the finest golf of any private club in the country. The challenging courses and friendly and professional staff create the ultimate golf experience.

The AIST Foundation outing will be held on two courses. Golfers will be assigned first to the North Course, with overflow to the West Course.

### North Course

*Designed by Robert Trent Jones in 1969*

The North Course, with three of the finest finishing holes in golf, and water on 10 out of the 18 holes, is easily Firestone's members' favorite course.

*Professional tournaments held on the North Course:*

- 1994 World Series of Golf Tournament
- 1976 American Golf Classic

### West Course

*Designed by Tom Fazio in 2001*

This links-style course is an excellent challenge that offers all types of holes and requires every club in the bag. Most golfers agree that it has the best greens of all three courses at Firestone.

*Professional tournaments held on the West Course:*

- 17 Ohio Senior Opens

## SCHEDULE

### Registration, Practice and Lunch

Noon–1 p.m.

### Golf

1–6 p.m.

### Dinner and Prizes

6–7 p.m.

## PRICING

### Single Golfer

US\$300

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Contact Lori Wharrey at [lwharrey@aist.org](mailto:lwharrey@aist.org) or +1.724.814.3044.

# SCHEDULE OF EVENTS

## Sunday, 3 May

Golf Registration, Practice, Lunch	Noon–1 p.m.
Student Plant Tour	Noon–4 p.m.
Technical Program	1–3:30 p.m.
Young Professionals' Plant Tour	1–4 p.m.
Conference Registration	Noon–5 p.m.
AIST Foundation Golf Classic	1–7 p.m.
Young Professionals' Reception <i>(by invitation)</i>	5–6 p.m.

## Monday, 4 May

Author/Chair Breakfast	7–8 a.m.
Conference Registration	7:30 a.m.–5 p.m.
<b>Howe Memorial Lecture</b>	<b>8–9 a.m.</b>
Exhibit Floor Open	9 a.m.–6 p.m.
AIST Service Center Open	9 a.m.–6 p.m.
Graduate Student Poster Contest Display	9 a.m.–6 p.m.
Undergraduate Student Project Presentation Contest	9:30–11:30 a.m.
Technical Sessions	9:30–Noon
University-Industry Relations Roundtable	Noon–1:45 p.m.
Technology Committee Meetings	Noon–2 p.m.
Technical Sessions	2–5 p.m.
AIST Welcome Reception — Exhibit Hall	5–6 p.m.
Steel to Students Reception	6–8 p.m.

## Tuesday, 5 May

Author/Chair Breakfast	7–8 a.m.
<b>President's Award Breakfast</b>	<b>8–9:45 a.m.</b>
Conference Registration	8:30 a.m.–5 p.m.
Exhibit Floor Open	9:30 a.m.–6 p.m.
AIST Service Center Open	9:30 a.m.–6 p.m.
Technical Sessions	10 a.m.–Noon
Exhibit Hall Lunch	11:30 a.m.–1:30 p.m.
Technology Committee Meetings	Noon–2 p.m.
Technical Sessions	2–5 p.m.
Reception — Exhibit Hall	5–6 p.m.

## Wednesday, 6 May

Author/Chair Breakfast	7–8 a.m.
Conference Registration	7:30 a.m.–2 p.m.
<b>Town Hall Forum</b>	<b>8:30–11:15 a.m.</b>
Exhibit Floor Open	11 a.m.–3 p.m.
AIST Service Center Open	11 a.m.–3 p.m.
Town Hall Lunch — Exhibit Hall	11:30 a.m.–1:30 p.m.
Vehicle Giveaway — Exhibit Hall	11:45 a.m.
Technology Committee Meetings	Noon–2 p.m.
Exhibitor Committee Meeting	1–2 p.m.
Technical Sessions	2–5 p.m.
AIST Prize Drawings	2:30–2:45 p.m.

## Thursday, 7 May

Plant Tour of ArcelorMittal Cleveland	7:30 a.m.–Noon
Plant Tour of Charter Steel – Cleveland	7:30 a.m.–Noon
Plant Tour of TimkenSteel Corp. – Faircrest Plant	7:30 a.m.–2 p.m.

The AISTech schedule of events is subject to change.





# HOUSING

To take advantage of the AISTech convention rates, be sure to book your reservation by 1 April 2015. After 1 April, changes can be made only to existing reservations.

- |  |  |  |   |
|--|--|--|---|
| 1. Cleveland Marriott Downtown at Key Center<br>127 Public Square<br><b>US\$189</b>            | 5. Wyndham Cleveland at Playhouse Square<br>1260 Euclid Ave.<br><b>US\$159</b> | 9. Residence Inn Cleveland Downtown<br>527 Prospect Ave.<br><b>US\$179 SOLD OUT</b>      | 13. Aloft Cleveland Downtown<br>1111 W. 10th St.<br><b>US\$169</b>    |
| 2. Renaissance Cleveland Hotel<br>24 Public Square<br><b>US\$184</b>                           | 6. Hampton Inn Downtown Cleveland<br>1460 E. Ninth St.<br><b>US\$159</b>       | 10. Holiday Inn Express Cleveland Downtown<br>629 Euclid Ave.<br><b>US\$169 SOLD OUT</b> | 14. Cleveland Airport Marriott<br>4277 W. 150th St.<br><b>US\$149</b> |
| 3. Hyatt Regency Cleveland at the Arcade<br>420 Superior Ave. E<br><b>US\$184</b>              | 7. The Westin Cleveland Downtown<br>777 St. Clair Ave. NE<br><b>US\$179</b>    | 11. The Ritz Carlton Cleveland<br>1515 W. Third St.<br><b>US\$219</b>                    |   |
| 4. DoubleTree Cleveland Downtown – Lakeside<br>1111 Lakeside Ave. E<br><b>US\$135 SOLD OUT</b> | 8. Radisson Hotel Gateway<br>651 Huron Road E<br><b>US\$129 SOLD OUT</b>       | 12. Hilton Garden Inn<br>1100 Carnegie Ave.<br><b>US\$139</b>                            |   |



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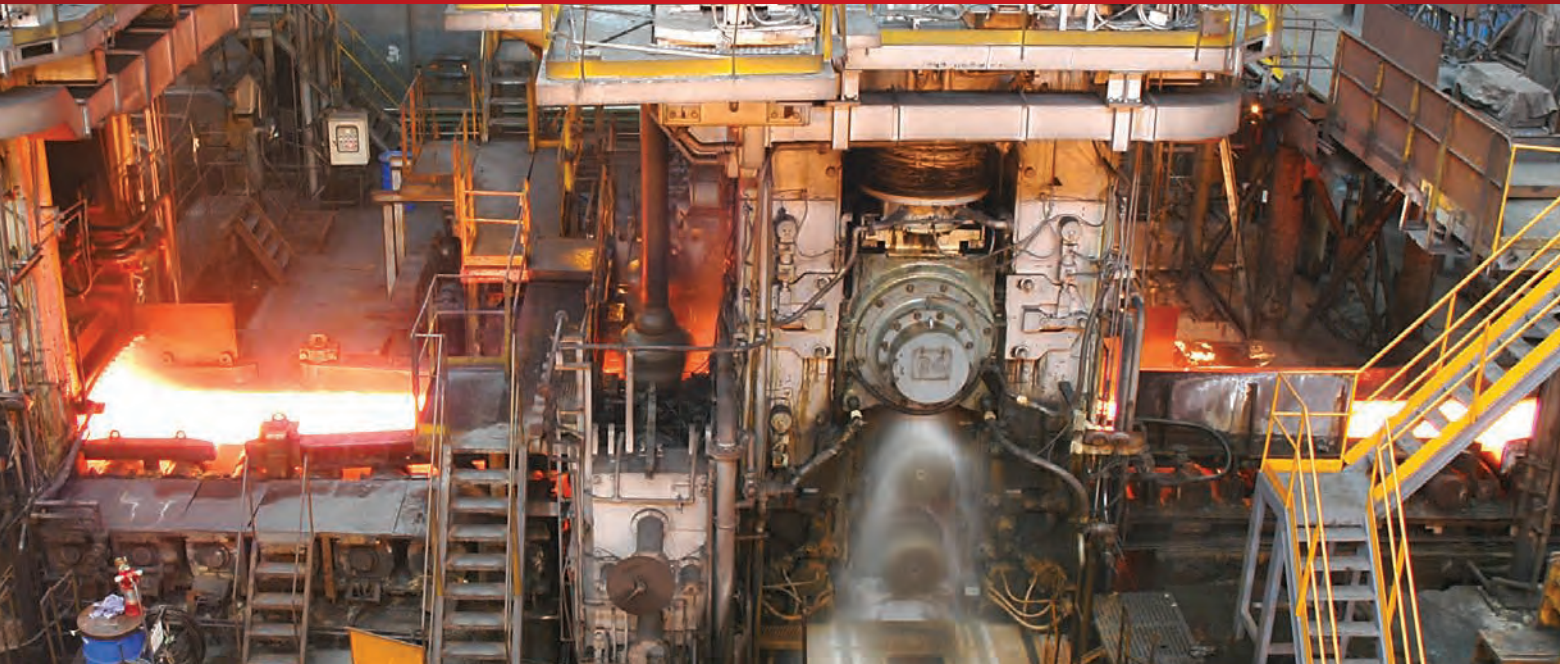
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- Intelligent Energy-Saving Technology for the Steel Industry Session: Energy and Utilities



*H.P. Chen – General Superintendent of Flat Rolling Department, China Steel Corporation*

*Włodzimierz Filipczyk – Chief Specialist, TMEIC Corporation*

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# Preliminary Technical Program

**Sunday, 3 May 2015**  
**ICSTI Opening Plenary Session**

## **1 p.m. — Ironmaking/ICSTI — Ironmaking Across the Globe**

**Rooms 26B/26C**

*Session Chairs: Pinakin Chaubal, ArcelorMittal Steel; Mike Riley, Praxair Inc.; Conrad Fisher, Steel Dynamics Inc.*

**1 p.m.**

### **Ironmaking in North America**

*L. Lherbier, United States Steel Corporation; J. Ricketts, ArcelorMittal*

**1:30 p.m.**

### **Current Status and Future Perspective of Japanese Ironmaking Technology for Environmental Solution**

*K. Saito, Y. Kurita, Nippon Steel & Sumitomo Metal Corp.*

**2 p.m.**

### **The Past, the Present and the Prospects of Ironmaking in China**

*S. Zhang, Wuhan Iron & Steel Co. Ltd.; X. Bi, Wuhan University of Science and Technology*

**2:30 p.m.**

### **Ironmaking in Western Europe**

*H. Längen, Steel Institute VDEh; M. Peters, P. Schmöle, ThyssenKrupp Steel Europe AG*

**Monday, 4 May 2015**  
**Morning Sessions**

## **9:30 a.m. — Cokemaking/ICSTI — Safety & Environmental**

**Room 23**

*Session Chairs: Wehnua Zheng, ACRE; Rob Carlin, DTE Energy Services*

**9:30 a.m.**

### **Construction and Operation of NSSMC Kashima 1E Coke Oven Battery**

*S. Ishikawa, K. Suzuki, H. Kunimasa, Y. Komai, R. Iki, Nippon Steel & Sumitomo Metal Corp.*

**10 a.m.**

### **Recent Experience in Commissioning Two Full Sets of Coke Oven Machines: Plant Features and Project Organization**

*A. Molinari, D. Zarcone, Paul Wurth Italia S.p.A.; K. Nowitzki, Schalker Eisenhütte Maschinenfabrik GmbH*

**10:30 a.m.**

### **Cokemaking: PT Krakatau POSCO's Gas Treatment Plant in Cilegon, Indonesia**

*F. Cerutti, A. Esposito, Paul Wurth Italia S.p.A.; B. Otten, M. Petzsch, DMT GmbH & Co. KG*

## Plenary Session

### Howe Memorial Lecture

Monday, 4 May 2015  
8–9 a.m.



Gordon

Role of Engineering Consultancy in the Transformation of a Technology Idea to a Working Process Plant

*Y. Gordon, HATCH Ltd.*

Paper titles, authors and company names are confirmed as of 15 January 2015. The full AISTech 2015 program, including abstracts, is available online at AISTech.org.

The AISTech technical program is arranged according to the structure of the AIST Technology Divisions and Technology Committees.

More  Online

AISTech 2015 will host ICSTI 2015 — The 7th International Congress on the Science and Technology of Ironmaking. ICSTI provides an opportunity to learn about and debate the essential issues and challenges in ironmaking today.

**Monday, 4 May • Morning****11 a.m.****Criteria to Evaluate Cokemaking Strategy for an Integrated Steel Plant***Y. Gordon, J. Busser, I. Cameron, HATCH Ltd.***11:30 a.m.****Automation of Coke Oven Batteries at Hyundai Steel in Korea***M. Schulz, K. Leuchtmann, ThyssenKrupp Industrial Solutions AG; C. Jin Hyung, K. Yong Mook, Hyundai Steel Co.***9:30 a.m. — Ironmaking/ICSTI —  
Ironmaking Modeling I —  
Prediction & Control  
Room 25A***Session Chairs: Kazuya Kunitomo, Kyushu University; Chenn Zhou, Purdue University Calumet; Keqian Liu, U. S. Steel Research and Technology Center***9:30 a.m.****Stable Blast Furnace Operation by the Application of Predictive Process Models***J. van der Stel, Tata Steel R&D; H. Jak, Tata Steel Mainland Europe; T. Bell, Tata Steel Long Products; J. Raleigh, Tata Steel Strip UK; T. Peeters, K. Andreev, Tata Steel R&D***10 a.m.****Analysis of Transient Processes in Blast Furnace***Y. Gordon, HATCH Ltd.; N. Spirin, V. Shvidkii, Y. Yaroshenko, B. Bokovikov, V. Moikin, Ural Federal University***10:30 a.m.****Development of Visualizing System of Blast Furnace Operation and Operational Application***A. Inayoshi, S. Matsuzaki, M. Ito, Nippon Steel & Sumitomo Metal Corp.***11 a.m.****Improvement of Blast Furnace Performance by Applying a High-Efficiency Expert System***X. Bi, P. Li, J. Zhou, W. Peng, Wuhan University of Science and Technology; K. He, S. Zhong, Shaogang Iron and Steel Group Co. Ltd.; X. Zhong, Kunlan Information Science and Technology Co.; D. Bai, W. Pan, K. Liu, Shaogang Iron and Steel Group Co. Ltd.***11:30 a.m.****General Mathematical Model of Adjusting Blast Volume of Blast Furnace Tuyeres***Y. Li, S. Cheng, University of Science & Technology Beijing; J. Gao, Jiuquan Iron & Steel (Group) Co. Ltd***9:30 a.m. — Ironmaking/ICSTI — Blast  
Furnace Operations I —  
Campaign Life & Productivity  
Room 25B***Session Chairs: Charles McGovern, ArcelorMittal Burns Harbor; Trevor Shellhammer, Shellhammer Consulting; Oscar Lingardi, Ternium Siderar***9:30 a.m.****ArcelorMittal Tubarão BF No. 1 First Campaign: Historical Results, Main Issues on Its Reline, Technological Updates, First Results of Second Campaign and Perspectives***C. da Costa, E. de Souza Belonia Filho, L. Wasem, E. Ribeiro, S. Pinto Jr., ArcelorMittal Tubarão***10 a.m.****Cleveland No. 6 Blast Furnace Hearth Campaign Extension***F. Huang, M. Andrade, O. Hassen, ArcelorMittal USA; P. Pergj, ArcelorMittal; D. Cronin, ArcelorMittal Steel***10:30 a.m.****AHMSA Blast Furnace No 5: Running the Third Campaign With an Accumulated 40 Million Tons of Hot Metal and a High Productivity***L. Castro, G. Perches, J. Villarreal, AHMSA; W. Teubl, BFT Blast Furnace Technical Assistance; J. Bortoni, AHMSA***11 a.m.****Longevity Technology Research and Practice of Baosteel No. 3 BF***R. Zhu, G. Sun, C. Lin, Baoshan Iron and Steel Co. Ltd.***11:30 a.m.****Operating Experiences at JSPL, BF-II (India) — Achieving Higher Performance Indicators With Inferior Raw Materials***H. Upadhyay, A. Bhagat, Jindal Steel & Power Ltd.***9:30 a.m. — Ironmaking/ICSTI —  
Sintering I  
Room 25C***Session Chairs: Hugh Crosmun, Carmeuse Lime & Stone Inc.; Bernard Vanderhayden, CRM group; Enrique Somolinos, Pasek Minerale***9:30 a.m.****Chemistry, Structure and Quality of Iron Ore Sinter***L. Lu, CSIRO Mineral Resources Flagship***10 a.m.****Influence of Fluidity of Liquid Phase of Iron Ore on Sintering Indexes***B. Su, S. Wu, G. Zhang, Z. Que, T. Song, H. Xue, University of Science & Technology Beijing*



Monday, 4 May • Morning

10:30 a.m.

Use of Halide Solution to Improve the RDI and RI of Sinter: An Experience at JSPL

S. Srivastava, B. Badhadra, D. Ray, M. Raghuwanshi, Jindal Steel & Power Ltd.

11 a.m.

The Practice of Putting No. 4 Sintering Machine Into Production at Baosteel

L. Ma, X. Wang, Baoshan Iron and Steel Co. Ltd.

11:30 a.m.

Liquidus Composition on the FeOx-Rich Side of the FeOx-CaO-SiO<sub>2</sub>

Y. Katahira, M. Hayashi, T. Watanabe, Tokyo Institute of Technology

### 9:30 a.m. — Ironmaking/ICSTI — Direct Reduction Ironmaking I — Use & Value of DRI Room 26A

Session Chairs: Narayan Govindaswami, Henry Gaines, Midrex Technologies Inc.; Atilio Guillermo Graziutti, Tenaris-Siderca

9:30 a.m.

Economics and Value-in-Use of DRI in the USA

A. Manenti, Tenova Core

10 a.m.

DRI Processing With Blast Furnace, EAF or Jet Process — A Comprehensive Overview

G. Wimmer, W. Sterrer, K. Pastucha, Siemens VAI Metals Technologies GmbH

10:30 a.m.

Strategies for Implementing Direct Reduction Technologies in an Integrated Steel Plant

I. Cameron, N. Patel, Y. Gordon, HATCH Ltd.

11 a.m.

Characteristics of Hot, High-Carbon DRI: ENERGIRON Results and Performances in Operating Plants

A. Martinis, Danieli Centro Metallics

11:30 a.m.

Evaluation of Silica Content and Metallization Degree of Pellets for Direct Reduction on Its Value in Use

M. Leite, E. Dutra, S. Guerra, Vale S.A.

### 9:30 a.m. — Ironmaking/ICSTI — Ironmaking Raw Materials I Room 26B

Session Chairs: Dennis Lu, ArcelorMittal Global R&D – East Chicago; Timothy Eisele, Michigan Technological University; Ashok Kumar, TATA Steel

9:30 a.m.

Trends in Ironmaking Given the New Reality of Iron Ore and Coal Resources

J. Noldin Jr., Lhoist; P. Schmöle, ThyssenKrupp Steel Europe AG; H. Lünen, Steel Institute VDEh

10 a.m.

Fundamentals of Iron Ore Concentrate Agglomeration Using Alternative Binders

J. Halt, S. Kawatra, Michigan Technological University

10:30 a.m.

Effect of Olivine Fineness and Thermal Profile on Oxidation-Sintering of Magnetite Concentrate Pellets

H. Ahmed, Luleå University of Technology; C. Andersson, Luossavaara-Kiirunavaara AB (LKAB); B. Björkman, Luleå University of Technology

11 a.m.

Effects of Gangue Minerals and Temperature on Reduction Behavior of Fe<sub>2</sub>O<sub>3</sub> Using Coke as a Reductant

G. Li, Y. Han, P. Gao, Y. Sun, Northeastern University

11:30 a.m.

Innovation and Application on Pelletizing Technology of Large Traveling Grate Machine

F. Zhang, Q. Wang, Z. Han, Beijing Shougang International Engineering Technology Co. Ltd.

### 9:30 a.m. — Ironmaking/ICSTI/ Environmental — Ironmaking Environmental Developments I Room 23

Session Chairs: Bill Allan, ENVIRON; Ray Tedford, Schust Engineering Inc.

9:30 a.m.

Influence of Lime Coating Coke on NO<sub>x</sub> Concentration in Sintering Process

M. Matsumura, K. Katayama, S. Kasama, K. Sato, Nippon Steel & Sumitomo Metal Corp.

10 a.m.

The EFA™ Process — Most Modern Sinter Plant Offgas Treatment Technology

F. Reufer, Paul Wurth Umwelttechnik GmbH

10:30 a.m.

Influence of Iron Ores on the No<sub>x</sub> Emission of Coke Combustion in the Sintering Process

Y. Zhang, S. Wu, G. Zhang, B. Su, University of Science & Technology Beijing; Z. Que, Baoshan Iron and Steel Co. Ltd.; L. Zhang, University of Science & Technology Beijing

11 a.m.

The Design and Operation of a Dust Tower for Studying the Dustiness of Raw Materials for Ironmaking

J. Halt, S. Kawatra, Michigan Technological University

**Monday, 4 May • Morning****11:30 a.m.**

Injecting Different Types of Biomass to the Blast Furnace and Their Impacts on the CO<sub>2</sub> Emission Reduction  
C. Wang, M. Larsson, J. Wikström, Swerea MEFOS AB;  
J. Lövgren, L. Nilsson, SSAB Europe

**9:30 a.m. — Electric Steelmaking — EAF Operations**  
**Room 24**

Session Chairs: Patrick Hansert, Badische Stahl Engineering GmbH; Harriet Dutka, Magnesita Refractories; Richard Phillips, Tube City IMS LLC

**10:30 a.m.**

Capacity Enhancement at Emirates Steel Industries: Continuous Improvement in EAF Performance With Hot DRI Charge

D. Patrizio, Danieli; P. Razza, Emirates Steel Industries;  
A. Pesamosca, Danieli

**11 a.m.**

Q-REG+: The Innovative Approach to Electrode Regulation

M. Piazza, M. Ometto, D. Onesti, Danieli Automation S.p.A.

**11:30 a.m.**

Detection and Resolution of Adverse Meltshop Conditions Through the Use of the GrafTech ArchiTech System

T. Kurela, D. Kenemuth, N. Lugo, GrafTech International Holdings Inc.

**9:30 a.m. — Oxygen Steelmaking — Environmental & Byproduct Management**  
**Room 19**

Session Chairs: Al Bentz, Al Bentz Group LLC; Dale Straughen, Berry Metal Co.; Joel Hatfield, Danieli Automation

**9:30 a.m.**

Beneficiation of BOF Steelmaking Converter Slag Fines With Weak Magnetic Separation

N. Ma, ArcelorMittal

**11:30 a.m.**

Systematic Study on Recycling of Waste Materials in an Integrated Steel Site

J. Riesbeck, Swerea MEFOS AB; A. Wedholm, SSAB Merox;  
K. Lundkvist, M. Brämning, Swerea MEFOS AB

**9:30 a.m. — Oxygen Steelmaking — Panel: Operator's Panel Discussion — Shop Floor Implementation of New Technology**  
**Room 12**

Session Chairs: Jamie Lash, U. S. Steel – Great Lakes Works; Neal Pyke, ArcelorMittal Dofasco Inc.; Jerry Moscoe, ArcelorMittal Indiana Harbor

**9:30 a.m.**

Panel Discussion

Moderator: Jerry Moscoe, ArcelorMittal Indiana Harbor  
Panelists from voestalpine, Erdemir, United States Steel Corporation and ArcelorMittal

**9:30 a.m. — Ladle & Secondary Refining — Ladle Metallurgy Technology**  
**Room 11**

Session Chairs: Helmut Oltmann, Nucor Steel–Berkeley; Anna Voss, Nucor Steel–Decatur LLC; Sunday Abraham, SSAB Iowa Inc.

**9:30 a.m.**

Floating Chemistry Aims Model Based on Grade, Reduction Ratio and Residuals

K. Normofidi, P. Gorapalli, Quad Infotech Inc.

**10 a.m.**

A Quicker Response to H<sub>2</sub> Measurement at the LMF Station and Its Effects on Steel Quality and Productivity at EVRAZ Regina

R. Rodrigo, Heraeus Electro-Nite Co. LLC; C. D'Souza, K. Dunnett, EVRAZ NA; P. Van der Zalm, Heraeus Electro-Nite Co. LLC

**10:30 a.m.**

Fundamentals of Steel Deoxidation

L. Zhang, Y. Ren, University of Science & Technology Beijing

**11 a.m.**

Model for Dehydrogenation During Secondary Steelmaking

A. Nunis, T. Ribeiro, J. Neto, A. Lotto, Institute for Technological Research of São Paulo State; C. Serantoni, Gerdau; M. Leite, Gerdau Special Steel Brazil; R. Badaraco, Gerdau Special Steel North America

**9:30 a.m. — Continuous Casting — Caster Design & High-Speed Casting**  
**Room 22**

Session Chairs: Rudolf Moravec, ArcelorMittal Global R&D – East Chicago; Dewey Humes, SMS Siemag LLC; Bill Schlichting, U. S. Steel Research and Technology Center





Monday, 4 May • Morning

9:30 a.m.

Heavy Vertical Bloom Casting — Design Features and Operational Results

*F. Wimmer, H. Thoene, P. Pennerstorfer, Primetals Technologies Austria GmbH*

10 a.m.

Give Me Five — Chinese Steel Producer Counts on Arvedi ESP for High-Quality Hot Strip Production

*A. Viehboeck, B. Linzer, A. Jungbauer, Siemens VAI Metals Technologies GmbH*

10:30 a.m.

CSP® Casting Technology — 25 Years of Success

*J. Mueller, C. Geerkens, W. Emling, SMS Siemag AG*

11 a.m.

The Continuous Slab Caster in the Twenty-First Century: Classical Mechanical Engineering Virtues Combined With State-of-the-Art Mechatronic Approaches

*M. Hirschmanner, H. Wahl, J. Guttenbrunner, Primetals Technologies Austria GmbH*

9:30 a.m. — Cold Sheet Rolling — Mill Performance

Room 14

*Session Chairs: Joani Phelps, AK Steel Corp. – Dearborn Works*

9:30 a.m.

Improvement Activities for a Hitting Ratio of Direct Production in JFE Fukuyama No. 4 CAL

*H. Matsushima, T. Horisawa, S. Tomotsune, Y. Sawada, JFE Steel Corp.*

10 a.m.

Adjustment of Cold Mill Capability by Intelligent Modernization — Latest References of SMS Siemag

*F. Töpfer, J. Schanderl, R. Holz, SMS Siemag AG*

11:30 a.m.

Quality Improvement and Cost Savings With Modern Roll Grinding Technology

*D. Schmidt, M. Ansorge, Heinrich Georg GmbH Maschinenfabrik*



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**Monday, 4 May • Morning****9:30 a.m. — Metallurgy — Steelmaking & Casting — Steelmaking Metallurgy  
Room 20**

*Session Chairs: Tom Zorc, The Timken Co.; Chad Cathcart, U. S. Steel Canada – Lake Erie Works; William Slye, Vesuvius USA*

**9:30 a.m.****Transient Behavior of Dephosphorization Kinetics in Oxygen Steelmaking**

*B. Rout, G. Brooks, Swinburne University of Technology; Z. Li, Tata Steel; A. Rhamdhani, Swinburne University of Technology*

**10 a.m.****Measuring Metallurgical Length and Application to Validating Dynamic Computational Model**

*B. Petrus, D. Hammon, M. Miller, R. Williams, A. Zewe, Nucor Steel; Z. Chen, J. Bentsman, B. Thomas, University of Illinois at Urbana-Champaign*

**10:30 a.m.****Utilization of Waste Carbons as a Carburizing Resource: Dissolution of Carbon Into Molten Iron**

*I. Mansuri, R. Khanna, V. Sahajwalla, University of New South Wales*

**11 a.m.****High-Temperature Reactions of Agricultural Wastes as Material Resources for EAF Steelmaking**

*A. Ismail, N. Yunos, S. Jamaludin, M. Asri Idris, N. Najmi, University Malaysia Perlis*

**11:30 a.m.****Melting of a New Carbon-Free Waxed Sponge Iron in Electric Arc Furnace for Steelmaking**

*J. Ahmed, Babylon University*

**9:30 a.m. — Metallurgy — Processing, Products & Applications — Product Metallurgy I  
Room 10**

*Session Chairs: C. Matthew Enloe, AK Steel Corp. – Dearborn Works; Kip Findley, Colorado School of Mines*

**9:30 a.m.****Effects of Thermomechanical Processing on Microstructure and Shear Properties of 22SiMnCrMoB TRIP-aided Martensitic Steel**

*T. Hojo, Iwate University; K. Sugimoto, Shinshu University; J. Kobayashi, Ibaraki University; T. Kochi, Kobe Steel Ltd.*

**10 a.m.****Considerations for Induction Processing of Alloy Steels**

*K. Clarke, C. Van Tyne, A. Clarke, D. Coughlin, Los Alamos National Laboratory*

**10:30 a.m.****The Effects of Nickel Content and Tempering Temperature on the Strength, Toughness and Ductile-to-Brittle Transition Temperature of New High-Toughness Secondary Hardening Steels**

*C. Norwood, W. Garrison, Carnegie Mellon University*

**11 a.m.****First Principles Calculation of Point Defect Effects on Fe/(V,Nb)Cx Interface Properties**

*K. Limmer, J. Medvedeva, Missouri University of Science and Technology*

**11:30 a.m.****Effect of Mn and Heating Rate With Short Soaking Time on the Continuous Cooling Transformation of Steel 42CrMo**

*Y. Liu, B. Jiang, X. Wen, J. Sun, L. Zhou, C. Zhang, University of Science & Technology Beijing*

**9:30 a.m. — Energy & Utilities — EAF Energy Savings  
Room 4**

*Session Chair: Dan Michael, Pyro Air International*

**9:30 a.m.****A New Consteel Evolution With iRecovery: Better Performances in Steel Production With Heat Recovery for District Heating and ORC Turbine Power Generation**

*C. Giavani, N. Monti, Tenova S.p.A.; U. De Miranda, R. Bontempi, Ori Martin S.p.A.*

**10 a.m.****Modeling Approach for the Analysis of Energy Recovery Benefits Applied in EAF Process for the Case of Elbe Stahlwerke Feralpi GmbH**

*P. Frittella, Centro Sviluppo Materiali S.p.A.; A. Ventura, S. Galassi, Centro Sviluppo Materiali – Rina; M. Baresi, Turboden; T. Bause, Elbe Stahlwerke Feralpi GmbH; E. Filippini, Feralpi Group; D. Forni, FIRE; N. Monti, Tenova*

**10:30 a.m.****Danieli Clean Heat Recovery (CHR): A Reliable Technology to Produce Electric Energy Recovering Heat From EAF Exhaust Fumes**

*C. Piemonte, F. Magris, Danieli & C. Officine Meccaniche SpA*

**11 a.m.****Novel Technologies for Particulate and Gaseous (Nox, Sox, HG, Dioxins) Pollution Control**

*T. Fisher, L. Raath, R. Davis, W.L. Gore & Associates*

**11:30 a.m.****Reliability of Electrical Systems: From Testing to Monitoring**

*A. Ross, J. Dennison, SD Myers; J. Rodriguez, Gerdau*



Monday, 4 May • Morning

## 9:30 a.m. — Electrical Applications — Electrical Application Case Studies Room 13

Session Chairs: Jeff Mason, Integrated Mill Systems Inc.;  
Sean Marlow, Steel Dynamics Inc. – Flat Roll Div. – Butler;  
Kevin Bort, Ron Tessendorf, TMEIC Corp.

9:30 a.m.

### California Steel 5-Stand Tandem Mill Modernization

T. Richards, TMEIC Corp.; T. Tran, California Steel Industries;  
G. Gepitulan, TMEIC Corp.

10 a.m.

### DC Motors Reliability Problem Solved at EVRAZ Continuous Caster in Pueblo, Colo.

F. Ardines, EVRAZ NA; B. Sainz, H. Ortiz, AMI GE

10:30 a.m.

### A Comparison of the Electrical Performance of Turn and Strand Insulation Systems Before and After Rapid Thermal Cycling

J. Covington, T. Reid, M. Nikrandt, Integrated Power Services

11 a.m.

### Insulation Life Diagnostics for Large Industrial Motors

R. Tessendorf, TMEIC Corp.; T. Kanekawa, Toshiba  
Mitsubishi-Electric Industrial Systems Corp. (TMEIC);  
N. Morita, Motor & carbonBRUSH Lab. Co. Ltd.; K. Sugimoto,  
Nippon Steel & Sumikin TEXENG Co. Ltd.; R. Race, DSP  
Development Corp.; K. Yamada, Showa Sokki Co. Ltd.

11:30 a.m.

### Rolling Mill Staff Training to Improve Performances in the Long Products Rolling Mill

M. Capitanio, R. Migliorati, Automazioni Industriali Capitanio  
SRL

## 9:30 a.m. — Computer Applications — Applications of Information Technology Room 7

Session Chairs: Christian Roth, Accenture; David Reynolds,  
Nucor Steel Gallatin

9:30 a.m.

### Optimizing Capacity and Growing Your Business Through Supply Chain Virtualization

G. Marzec, Northrop Grumman

10 a.m.

### Command Execution in Automated Systems From Procedures Created by Maintenance and Process Engineers Through the Use of a CNL and a Knowledge Base

F. Barreiro, A. Barreiro, J. Moody, ANT Automation

10:30 a.m.

### Alleviating Apprehensions While Moving to Cloud and Mobility in Steel Operations

M. Subramaniam, HCL Technologies

11 a.m.

### Engineering Tools for the Steel Mill Environment

M. Leer, CHL Systems

11:30 a.m.

### Centralized Maintenance Scheduling System Implemented at ArcelorMittal Dofasco

D. Plant, R. Thomas, ArcelorMittal Dofasco Inc.

## 9:30 a.m. — Maintenance & Reliability — Reliability Culture Room 6

Session Chairs: Colleen Reeves, Andronaco Industries; Tim  
Canaley, Rexnord; Bill Hagenau, SSAB Americas

9:30 a.m.

### Safety and Reliability — “Inseparable for a Reason”

R. Heisler, Life Cycle Engineering

10 a.m.

### The Future of Equipment Maintenance and Reliability — Readily Accessible Information

J. Hatfield, HECO Inc. Industrial Service Groups

10:30 a.m.

### Improving Operations, Maintenance, and Reliability by Improving Employee Engagement and Ownership

L. Bufogle, R. Johnson, ArcelorMittal Cleveland

11 a.m.

### Financial Return of the Performance Culture

M. Broussard, SAMI Corp.

11:30 a.m.

### Systematic Approach to Reliability-Centered Maintenance in ArcelorMittal Montreal

A. Rail, ArcelorMittal Montreal; K. Chatterjee, ArcelorMittal  
Americas

## 9:30 a.m. — Refractory Systems — Steelmaking & Casting Refractory Technology Room 15

Session Chairs: Xin Zhang, ArcelorMittal Indiana Harbor;  
Rakesh Dhaka, United States Steel Corp.; Al Dainton,  
Vesuvius USA

9:30 a.m.

### Statistical Data Analysis for Process Improvements at ES Abu Dhabi

G. Lammer, RHI AG; A. Hanna, RHI Canada Inc.

**Monday, 4 May • Morning****10 a.m.****High-Performance Ladle Bricks***A. Torigoe, M. Yoshida, H. Tomiya, Shinagawa Refractories Co. Ltd.***10:30 a.m.****Taphole Free Opening Optimization in the EAF Through Monitorized Grain Size Distribution Control of the EBT Filler Sand: Laboratory Testing and Industrial Application***E. Somolinos, E. Ruisanchez, J. Martinez, Pasek Minerale***11 a.m.****Novel Refractory Plate Sealing Technology***J. Ovenstone, L. Sun, Vesuvius Advanced Ceramics (China) Co. Ltd.***11:30 a.m.****Ladle Refractory Cost Reduction***Y. Matsuo, Godo Steel Ltd.***9:30 a.m. — Cranes — Cranes****Room 1***Session Chairs: Mike Urbassik, Electric Controller & Manufacturing Co. LLC; Tom Berringer, Gantrex Inc.; Bobby Askew, Nucor Steel—Hertford County***10 a.m.****Improving Safety and Productivity by Using State-of-the-Art Overhead Handling System for Rails at Union Pacific***J. Barney, JBS Cranes; E. La Bruna, Janus Automation***10:30 a.m.****Technology-Based Crane Monitoring and Diagnostics***S. Bailey, IVC Technologies***11 a.m.****Motion Analysis for Determining Behavior of Automated and Manual Overhead Bridge Cranes and Other Rail-Guided Vehicles***T. Anderson, K. Förderer, B. Zimmerman, PSI Technics Ltd.***11:30 a.m.****AC Motors That Are Drop-In Replacements for DC Mill Motors***R. Warriner, Flow In Motion LLC***Monday, 4 May 2015  
Afternoon Sessions****2 p.m. — Environmental — Air Treatment Innovations****Room 5***Session Chairs: Vern Martin, Flowcare Engineering Inc.; Dejan Zrelec, Tenova Goodfellow***2 p.m.****Innovative Gas Cleaning Solutions and Utilization of BOF Gases: Operational Results and Benefits***K. Alshurafa, SMS Siemag LLC; C. Fröhling, T. Wuebbels, M. Meyn, SMS Siemag AG***2:30 p.m.****Environmental Improvement for Steelmaking Plant at Funabashi Works***T. Tachibana, Godo Steel Ltd.***3 p.m.****Cyclone Development at Siemens MT***D. Mason, S. Hollins, Siemens VAI Metals Technologies***3:30 p.m.****Dust Collection Efficiency Increase of Process Electrostatic Precipitator in Samarco Pelletizing Furnace***L. Cláudio von Sperling Cotta, M. Athayde, V. de Menezes Vidal, G. Ferreira Viana, M. de Castro Souza, S. Fernando Nunes, Samarco Mining S/A***4 p.m.****Current Best Practice for Rolling Mill Fume Exhaust System Design***W. Frank, Busch International***4:30 p.m.****20 Economical Ways to Improve the Performance of a Baghouse Dust Collector***M. Allen, K. Zipsie, CLARCOR Industrial Air***2 p.m. — Cokemaking/ICSTI — Coke Quality & Blast Furnace Performance****Room 21***Session Chairs: Sam Sheyn, AK Steel Corp. – Middletown Works; Viktor Stiskala, ThyssenKrupp Steel Europe AG***2 p.m.****Fundamental Coke Kinetic Studies Using a Coke Analogue***A. Jayasekara, R. Longbottom, B. Monaghan, University of Wollongong***2:30 p.m.****Coke Degradation Under Blast Furnace Conditions***X. Xing, University of New South Wales; H. Rogers, BlueScope Steel; K. Hockings, BHP Billiton; G. Zhang, University of Wollongong; P. Zulli, BlueScope Steel; O. Ostrovski, University of New South Wales***3 p.m.****Micro-CT Analysis of Coke and Its Relationship to Coke Quality Indicators***H. Lomas, NIER, University of Newcastle; D. Jenkins, CSIRO; M. Mahoney, R. Roest, NIER, University of Newcastle; R. Pearce, R. Li, S. Mayo, D. Wang, CSIRO*



Monday, 4 May • Afternoon

3:30 p.m.

#### Evaluation of Coke Strength

*P. Bennett, A. Reifenstein, ALS Coal; F. Shi, Julius Kruttschnitt Mineral Research Centre*

4:30 p.m.

#### Investigation of Coking Behavior of Coals Using an Automated Sapozhnikov Plastometer

*L. Lu, CSIRO Mineral Resources Flagship*

### 2 p.m. — Ironmaking/ICSTI — Blast Furnace Operations II Room 25A

*Session Chairs: Bruce Stackhouse, ArcelorMittal Cleveland; Jialong Yang, Anhui University of Technology; Arthur Cheng, Vesuvius USA*

2 p.m.

#### Managing a Blast Furnace Operation During Abnormally Cold Weather

*S. Street, AK Steel Corp. – Dearborn Works*

2:30 p.m.

#### Innovative and Safety-Oriented Approach to Blast Furnace Revival From Chilled Hearth

*F. Cravino, C. Cristiano, C. Di Pietro, M. Bastieri, Paul Wurth Italia S.p.A.*

3 p.m.

#### Blast Furnace Banking and Blowdown: A Theoretical and Practical Approach to Preparing for an Extended Outage and Start-Up

*M. Alter, C. McGovern, D. White, M. Kus, ArcelorMittal Burns Harbor*

3:30 p.m.

#### A Case Study of Lower Furnace Heat Loss, Furnace Design, Process Efficiency and Their Interdependence

*R. Vaynshteyn, E. Engel, Danieli Corus BV*

4 p.m.

#### Replacement and Start-Up of New Third Hot Stove for Kokura No. 2 Blast Furnace

*T. Kojima, T. Taniguchi, A. Ishikawa, T. Umesaki, Nippon Steel & Sumitomo Metal Corp.*

4:30 p.m.

#### High Efficiency and Low Fuel Consumption Operation Performance on No. 8 BF at WISCO

*X. Li, L. Lu, Wuhan Iron & Steel Co. Ltd.*

### 2 p.m. — Ironmaking/ICSTI — Sintering II Room 25B

*Session Chairs: Tao Jiang, Central South University; Liming Lu, CSIRO Mineral Resources Flagship; Hans-Bodo Lünge, Steel Institute VDEh*

2 p.m.

#### Selective Agglomeration of Fine Materials for Sintering

*M. Zhang, ArcelorMittal Global R&D*

2:30 p.m.

#### Assimilation Behavior of CaO Source in the Sintering Process

*C. Funada, Tohoku University; J. Okazaki, T. Nishimura, Nippon Steel & Sumitomo Metal Corp.*

3 p.m.

#### Influence of Chemical Compositions on Liquid Fluidity of Ferrite

*B. Su, S. Wu, J. Zhu, J. Bei, W. Huang, University of Science & Technology Beijing*

3:30 p.m.

#### On-Line Conveyor Belt Elemental Analysis for Sinter Feed Chemistry Control

*K. Gordon, S. Nel, G. Noble, Thermo Fisher Scientific*

4 p.m.

#### Evaluation of Hydration Characteristics of the Lime Used for Iron Ore Sintering Based on the Constant-Temperature Calorimetric Method

*L. Zhang, Baoshan Iron and Steel Co. Ltd.; S. Wu, University of Science & Technology Beijing; Y. Zhang, M. Zhou, Baoshan Iron and Steel Co. Ltd.*

4:30 p.m.

#### Characterization of Wetting Behavior Between Calcium Ferrite Series Melts and $Al_2O_3$ , MgO Substrate

*X. Lv, B. Yu, S. Xiang, C. Bai, J. Yin, Chongqing University*

### 2 p.m. — Ironmaking/ICSTI — Direct Reduction Ironmaking II — Gas-Based DRI Room 25C

*Session Chairs: Ian Cameron, HATCH Ltd.; Alberto Hassan, Intl. Iron Metallics Assoc.; Angelo Manenti, Tenova Core*

2 p.m.

#### Developing the MIDREX® Direct Reduction Process — Technological Innovations and Process Enhancements

*H. Gaines, Midrex Technologies Inc.*

2:30 p.m.

#### The Effect of High Operating Pressure in ENERGIRON Reactor Design, on Performance and Reactor Productivity

*P. Duarte, J. Becerra, D. Sweitzer, Tenova*

3 p.m.

#### Status and Start-Up of United Steel Co. (SULB) MIDREX® Combination CDRI/HDRI Plant

*T. Ames, Midrex Technologies Inc.*

3:30 p.m.

#### Performance of the New Alloy in DRI Processes

*L. Quaranta, P. Imizcoz, P. Cardin, Schmidt+Clemens*

**Monday, 4 May • Afternoon****4 p.m.****A Novel Test of Catalyst Activity***E. Chen, ArcelorMittal USA***2 p.m. — Ironmaking/ICSTI — Ironmaking  
Environmental Developments II  
Room 26A***Session Chairs: Al Bentz, Al Bentz Group LLC; Larry Southwick, L.M. Southwick & Associates; Franz Reufer, Paul Wurth Umwelttechnik GmbH***2 p.m.****Research on Pelletizing Dynamics of Iron and Steel Plant Metallurgical Dust***S. Wu, H. Lu, M. Kou, F. Chang, K. Du, H. Li, University of Science & Technology Beijing***2:30 p.m.****Interaction Between Injected Waste Plastics and Coke Bed in the Blast Furnace***A. Babich, D. Senk, S. Benkert, RWTH Aachen University***3:30 p.m.****Optimized Waste Gas Recirculation Layouts for Environment-Friendly and Energy-Efficient Sintering of Iron Ores***B. Vanderheyden, F. van Loo, C. Mathy, J. Pierret, CRM Group***4 p.m.****Analysis of Influencing Factors of the Carbon Content of the Blast Furnace Offgas Dust***J. Sun, H. Chen, J. Wu, Shougang Research Institute of Technology***4:30 p.m.****Recycling Agricultural Waste as an Iron Reductant in Steelmaking Processes***N. Yunos, A. Ismail, M. Idris, University Malaysia Perlis***2 p.m. — Ironmaking/ICSTI — Ironmaking  
Raw Materials II  
Room 26B***Session Chairs: Louis Giroux, Canmet ENERGY-OTTAWA; Peter Duncanson, GrafTech International Ltd.; Janice Bolen, HATCH Ltd.***2 p.m.****Stockhouse-Based Defreezing, Drying and Pre-Heating of Coke and Pellets***R. Vaynshteyn, E. Engel, Danieli Corus BV***2:30 p.m.****Increase of the Sinter Basicity Through the Insertion of Partially Inert Magnesium Silicate Mini Lumps With Mineralogically Stable Interphases***E. Somolinos, E. Ruisanchez, J. Martinez, C. Escudero, Pasek Minerales***3 p.m.****Chemistry vs. Morphology vs. Reducibility — Some (Non-) Existing Correlations***M. Hanel, J. Schenk, H. Mali, Montanuniversität Leoben; C. Thaler, voestalpine Stahl GmbH; F. Hauzenberger, Siemens VAI Metals Technologies GmbH; B. Kain-Bückner, Montanuniversität Leoben; H. Stocker, voestalpine Stahl Donawitz GmbH***3:30 p.m.****Effect of Simulant Ash on Wetting Behavior of Liquid Iron on Carbonaceous Material Substrate***K. Ohno, T. Miyake, S. Yano, C. Nguyen, T. Maeda, K. Kunitomo, Kyushu University***4 p.m.****Studying the Sintering Behavior of Oxidized Magnetite Pellet During Induration***K. Telkicherla, N. Viswanathan, H. Ahmed, Luleå University of Technology; C. Andersson, Luossavaara-Kiirunavaara AB (LKAB); B. Bjorkman, Luleå University of Technology***4:30 p.m.****Analysis of the Low Reduction Index of North Africa Lump Ore***Z. Ma, J. Sun, H. Chen, Shougang Research Institute of Technology***2 p.m. — Ironmaking/ICSTI/Computer  
Applications — Ironmaking/  
Computer Modeling  
Room 23***Session Chairs: Henrik Saxen, Abo Akademi University; Patrick Gallagher, Management Science Associates Inc.; William Slye, Vesuvius USA***2 p.m.****Investigation of High Rate of Natural Gas Injection Into Blast Furnace***Y. Chen, B. Wu, Y. Zhao, Purdue University Calumet; N. Macfadyen, Union Gas Ltd.; S. Crawford, U. S. Steel Canada – Lake Erie Works; J. Capo, United States Steel Corporation; J. D'Alessio, U. S. Steel Canada – Lake Erie Works; C. Zhou, Purdue University Calumet***2:30 p.m.****Multi-Phase Flow Simulation in Blast Furnace by MPS-CFD Coupling Model***T. Kon, S. Ueda, N. Maruoka, H. Nogami, Tohoku University***3 p.m.****Optimized Blast Furnaces Operation With Integrated Burden Control***M. Schaler, H. Fritschek, T. Kronberger, B. Schürz, Siemens VAI Metals Technologies GmbH*

**Monday, 4 May • Afternoon**

**3:30 p.m.**

Numerical Analysis of Injection of Liquid Hydrocarbons, Processed Waste Plastics and Pulverized Coal Into Blast Furnace Raceways

*C. Maier, C. Jordan, Vienna University of Technology; C. Feilmayr, C. Thaler, voestalpine Stahl GmbH; M. Harasek, Vienna University of Technology*

**4 p.m.**

Investigation of Co-Injection of Natural Gas and PCI in Blast Furnace

*Y. Chen, B. Wu, T. Okosun, Purdue University Calumet; S. Street, AK Steel Corp. – Dearborn Works; C. Zhou, Purdue University Calumet*

**4:30 p.m.**

Drain Rate and Liquid Level Simulation in Blast Furnace Hearth

*H. Upadhyay, Jindal Steel & Power Ltd.; T. Kundu, Indian Institute of Technology*

**2 p.m. — Electric Steelmaking — EAF  
Technology Innovations  
Room 24**

*Session Chairs: Greg Buragino, Air Products & Chemicals, Inc.; Zane Voss, Nucor Steel-Decatur LLC; Steven Meyer, Tenova Core*

**2 p.m.**

Controlling the Electric Arc Properties in an Industrial AC EAF: Simulations Versus Experiments

*F. Stahl, M. Kühnemund, Dörrenberg Edelstahl GmbH; K. Krüger, Max Aicher GmbH & Co. KG; M. Hergt, W. Hartmann, B. Dittmer, A. Döbbeler, T. Matschullat, Siemens AG; D. Tieseler, Primetals Technologies USA LLC*

**2:30 p.m.**

Water Leak Detection Using ZoloSCAN Laser Diagnostic System

*K. Grieshaber, Zolo Technologies; F. Martinez, AMIGE*

**3 p.m.**

Minimizing False Alarms in EAF Water Leak Detection

*I. Todorovic, M. Luccini, H. Alshawarghi, Tenova Goodfellow Inc.*

**3:30 p.m.**

New Burner Technology of Badische for Higher Energy Efficiency, Improved Reliability and Less Refractory Wear

*V. Andreas, K. Libera, A. Grosse, S. Buls, Badische Stahl-Engineering GmbH; P. Hansert, BSE America*

**4 p.m.**

Improvement of EAF Process and Refractory Consumption by Advanced Slag Modeling

*M. Kirschen, RHI AG; A. Hanna, RHI Canada Inc.; K. Zetti, RHI AG*

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**Monday, 4 May • Afternoon****4:30 p.m.**

Condition Monitoring for AC Electric Arc Furnace and Its Electrode Regulation System: System Benefits and Customer Feedback

*D. Tieseler, Primetals Technologies USA LLC***2 p.m. — Oxygen Steelmaking — Productivity & Process Optimization**  
**Room 19***Session Chairs: Ho Yong Hwang, ArcelorMittal Global R&D – East Chicago; Shank Balajee, ArcelorMittal USA Indiana Harbor; Jim Kelly, Praxair Metals Technologies Inc.***2 p.m.**

BOF Lance Technology Enhancements and Process Improvements

*M. Mattich, T. Smith, Berry Metal Co.***3 p.m.**

Improving Hot Metal Desulfurization Process Performance — A Case Study

*S. Kumar, Y. Gordon, HATCH Ltd.***3:30 p.m.**

Scrap Volume Measurement Using Radar Technology

*C. Augustin, J. Sagasti, M. Schönhofer, F. Ahualli, AustralTek***2 p.m. — Ladle & Secondary Refining — Ladle Processing Technology**  
**Room 11***Session Chairs: Mike Callahan, Nucor Steel Gallatin; Chase Ault, Steel Dynamics Inc. – Flat Roll Div. – Butler; Kamalesh Mandal, Steel Dynamics Inc. – Flat Roll Div. Columbus***2 p.m.**

A New Vibration Ladle Slag Detection System

*L. Tian, J. Yang, A. Fei, RAMON Science & Technology Co. Ltd.***2:30 p.m.**

CFD Modeling to Simulate Gas Stirring Process Using Bottom Plugs in a Steel Ladle

*P. Shivaram, United States Steel Corporation***3 p.m.**

Optimal Mixing Condition for Top Stir Gas Injection at ArcelorMittal Burns Harbor

*H. Hwang, M. Pratt, K. Bury, ArcelorMittal***3:30 p.m.**

Thermal Operation of Ladle Furnace With the Gas Bubble Blowing

*Y. Gordon, HATCH Ltd.; V. Shvidkii, S. Novokreshenov, D. Cheremisin, Ural Federal University***4 p.m.**

Revisiting Slag Eye in Molten Steel

*R. Mishra, A. Nandwana, R. Chaudhary, ABB Corporate Research Center; E. Frigin, Vale***2 p.m. — Continuous Casting — Tundish & SEN Design**  
**Room 22***Session Chairs: Jeff Brower, Siemens Industry Inc.; Asish Sinha, U. S. Steel Research and Technology Center***2 p.m.**

Mold Flow Optimization in a Wide Slab Caster Through Water Modeling Experiments

*X. Zhou, Y. Wang, S. Abraham, R. Bodnar, B. Baer, D. Brown, SSAB Iowa Inc.***2:30 p.m.**

Tundish Flow Regulation With Advanced Refractory Designs

*J. Rogler, Vesuvius USA; J. Richaud, Vesuvius France; W. Chung, Vesuvius USA***3 p.m.**

ArcelorMittal Burns Harbor No. 2 Continuous Caster/Bitop Conversion

*J. Frey, T. Preall, ArcelorMittal Burns Harbor; D. Kanosky, PRC America Inc.; K. Wallace, Opta Minerals Inc.***3:30 p.m.**

Effect of Refractory Design on Nitrogen Pickup and Sealing of Ladle Shroud/Collector Nozzle Joint

*Q. Robinson, R. Stalter, A. Charnock, R. Maddalena, M. Hughes, Vesuvius Research***4 p.m.**

Innovative Flow Control Refractory Products for the Continuous Casting Process

*G. Hackl, G. Nitzl, Y. Tang, C. Eglsåer, RHI AG; D. Chalmers, RHI US Ltd.***4:30 p.m.**

Understanding the Clogging Phenomenon During High-Al TRIP Steel Casting

*R. Liu, L. Laus, Y. Lee, H. Yin, J. Macino, J. Cottrell, R. Gass, M. Krug, ArcelorMittal Global R&D***2 p.m. — Continuous Casting/Metallurgy — Steelmaking & Casting — Caster Fluid Flow & Heat Transfer Modeling**  
**Room 12***Session Chairs: J.C. Raies, Dover Hydraulics Inc.; David Wise, Evertz Technology Service USA; Tom Piccone, U. S. Steel Research and Technology Center*





Monday, 4 May • Afternoon

2 p.m.

**The Fluid Dynamics and Impinging Behavior of Air Mists Used for Secondary Cooling of Thin Slabs**

*A. Castillejos, M. de León, M. Huerta, CINVESTAV – Unidad Saltillo*

2:30 p.m.

**Thermomechanical Behavior of a Wide-Slab Casting Mold**

*G. Hamilton, L. Hibbeler, B. Thomas, University of Illinois at Urbana-Champaign*

3 p.m.

**Advanced Technologies for the Casting of Slabs, Blooms and Billets: New Developments in Casting Technologies**

*R. Wolf, Lechler Inc.*

3:30 p.m.

**Modeling of Non-Isothermal Melt Flows in a Tundish**

*S. Chatterjee, K. Chattopadhyay, University of Toronto*

4 p.m.

**Belt Casting Technology — Experiences Based on the World's First BCT Caster**

*J. Wans, C. Geerkens, H. Cremers, D. Austermann, SMS Siemag AG*

4:30 p.m.

**Metallurgical Behavior of the Ultra-Wide-Slab Continuous Casting Mold**

*Y. Wang, C. Du, S. Li, J. Zhang, University of Science & Technology Beijing*

**2 p.m. — Hot Sheet Rolling/Electrical Applications Sensors Systems — New Sensor Technology & Hot Rolling**

**Room 13**

*Session Chairs: John Wallace, SES LLC; Michael Peretic, SMS Group; Chris Burnett, Thermo Fisher Scientific*

2 p.m.

**A New Generation Optical Flatness Measurement**

*P. Kierkegaard, L. Classon, Shapeline*

2:30 p.m.

**Practical Applications of Surface Inspection System at the Hot Mill**

*R. Pavlosky, L. Galey, M. Assar, ArcelorMittal Cleveland; L. Zhang, ArcelorMittal Global R&D Center – East Chicago*

3 p.m.

**Q-VID: A Revolutionary Approach to Vision-Based Measurements and Control**

*R. Ferrari, A. Ardesi, I. Visentini, Danieli Automation S.p.A.*

3:30 p.m.

**Technological Developments for the Production of High-Strength Steels**

*J. Lee, J. Hinton, P. Hunt, Primetals Technologies*

4 p.m.

**Development of Looper Shapemeter in Hot Rolling**

*N. Migakida, H. Furumoto, K. Hayashi, R. Kinose, S. Maniwa, T. Owada, Primetals Technologies Japan Ltd.; S. Kanemori, S. Sueda, Mitsubishi Heavy Industries Ltd.*

4:30 p.m.

**Specialty Hot Strip Mill Surface Defect Detection Utilized in a Unique Configuration and Product Mix — SIAS® NextGen System**

*B. Smith, A. Nasserian, Primetals Technologies U.S.A. Holdings Inc.*

**2 p.m. — Cold Sheet Rolling — Annealing & Rolling Theory**

**Room 14**

*Session Chair: Matt Baur, AK Steel Corp. – Middletown Works; Tad Sendzimir, T. Sendzimir Inc.*

2 p.m.

**Hydrogen Batch Annealing, Performance Comparison of Convection Systems**

*M. McDonald, RAD-CON Inc.; D. Weaver Jr., Robinson Fans Inc.*

2:30 p.m.

**Numerical Solution of von Karman on Elastic Foundation With Loading and Unloading Processes in Material Work Hardening Curve**

*R. Guo, Tenova I2S*

3 p.m.

**Transverse Roll Gap Model Validation Based on Empirical Studies of Mill Deformation, Shape Actuation Behavior and Incoming Strip Profile**

*M. Zipf, Cold Rolling Technologies Inc.*

3:30 p.m.

**Optimizing Strip Speed Measurements for Mass Flow-AGC and Elongation Control With Laser Velocimeters — A Case Study**

*G. Bering, Polytec GmbH; P. Nawfel, Polytec Inc.*

4 p.m.

**Hydroprime® Modular Plants Provide Low-Cost, Reliable Hydrogen for Steel Processing**

*G. Shahani, Linde Engineering; K. Finley, Hydro-Chem; G. Moroz, Linde Gas; L. Lyda, Hydro-Chem*

4:30 p.m.

**Exposed Panel Surface Production Process: Understanding the Contribution of an Annealing Furnace in Achieving Exposed Surface Quality Requirements**

*K. Kahoul, Danieli Centro Combustion*

**Monday, 4 May • Afternoon****2 p.m. — Rod & Bar Rolling — SBQ  
Rolling  
Room 9**

*Session Chairs: Kevin Barbee, Danieli Corp.; Tracy Schutz, Nucor Steel Seattle Inc.; Matt Blitch, Nucor Steel–Nebraska*

**2:30 p.m.****The New 4-Roll Siemens Sizing Mill: The Evolution of Bar Sizing**

*A. Nardini, M. Langè, Siemens; E. Osto*

**3 p.m.****Optimization of Machinery Design and Process Parameters With the 3-Roll RSB SCS® for Perfect SBQ Production**

*P. Connell, Kocks Pittsburgh Co.; S. Filippini, W. Ammerling, Friedrich Kocks GmbH & Co.*

**3:30 p.m.****Upgrading an Existing Bar Mill for SBQ Production by Retrofitting a High-Performance Abrasive Cutoff Machine**

*N. Asamer, BRAUN Machine Technologies LLC*

**4 p.m.****Possibilities and Limitations of Free Size Rolling With Respect to Size and Temperature Variations of Different Materials**

*C. Overhagen, P. Mauk, University of Duisburg-Essen*

**2 p.m. — Rolls — Roll Shop Processing  
Room 15**

*Session Chairs: Terry Boyd, Nucor Steel–Arkansas; Bob Bennett, Nucor Steel–Indiana; Ray Schleiden, United Rolls Inc.*

**2 p.m.****Roll Loadings and Their Effects on Stresses and Strains in Big Work and Backup Rolls for Plate and Strip Mills**

*R. Braun, M. Hinnemann, P. Mauk, V. Goryany, University of Duisburg-Essen; C. Zybill, Karl Buch Walzengießerei GmbH & Co. KG*

**2:30 p.m.****Finite Element Analysis and Hot Compression Studies of High-Speed Steel Work Rolls**

*K. Redkin, C. Hrizo, WHEMCO Inc.; I. Garcia, University of Pittsburgh*

**3 p.m.****High-Speed Correction Grinding With Carbon Fiber Grinding Wheels — A Milestone in Grinding Technology**

*J. Jörgens, Maschinenfabrik Herkules*

**3:30 p.m.****New Surface Finishes for Cold Rolling Mills**

*R. McWhirter, M. Cavallari, P. Gaboardi, C. Trevisan, M. Perassolo, Tenova S.p.A.*

**4 p.m.****Development of Sarclad Carbide Deposition Texturing (CDT) as a Method for Increasing Campaign Length of Temper Mill Work Rolls**

*G. Evans, T. Lowbridge, Sarclad Ltd.*

**4:30 p.m.****Results With the Next-Generation Eddy Current Technology for Roll Inspection Systems**

*R. van Kollenburg, S. Mul, E. van den Elzen, Lismar Engineering B.V.*

**2 p.m. — Metallurgy — Steelmaking  
& Casting — Clean Steel  
— Inclusion Formation  
Fundamentals  
Room 20**

*Session Chairs: Scott Story, U. S. Steel Research and Technology Center; Thinium Natarajan, U. S. Steel Research and Technology Center; Roger Maddalena, Vesuvius USA*

**2 p.m.****The Aluminum-Oxygen Equilibrium in High-Al Steels**

*B. Zhou, H. Pielet, P. Kaushik, ArcelorMittal Global R&D*

**2:30 p.m.****Thermodynamics of N and O in High-Mn and High-Al Alloyed Liquid Steels**

*M. Paek, S. Chatterjee, I. Jung, McGill University*

**3 p.m.****Condition to Suppress Spinel Formation in Ladle Treatment Predicted by the Kinetic Simulation Model**

*S. Kim, Tohoku University; A. Harada, JFE Steel Corp.; S. Kitamura, Tohoku University*

**3:30 p.m.****Reduction of Slags and Refractories by Al in Steel and Inclusion Modification**

*H. Mu, B. Webler, R. Fruehan, Carnegie Mellon University*

**4 p.m.****Improving the Castability and Increasing the Sequence Length of IF-TiSULC Steel Grades at ArcelorMittal Lázaro Cárdenas and Tubarao**

*P. Kaushik, ArcelorMittal Global R&D; R. Lule, G. Castillo, J. Delgado, F. Lopez, ArcelorMittal Mexico; C. Perim, B. Henriques, A. Nascimento, G. Pigatti, F. Barbosa, ArcelorMittal Tubarão*

**4:30 p.m.****Reoxidation of Inclusions After Aluminum Deoxidation and Calcium Treatment**

*J. Tan, B. Webler, Carnegie Mellon University*

Monday, 4 May • Afternoon

**2 p.m. — Metallurgy — Processing, Products & Applications — Product Metallurgy II**  
**Room 10**

Session Chairs: Dan Baker, AK Steel Corp. – Dearborn Works; Kester Clarke, Los Alamos National Laboratory

**2 p.m.**  
**Behavior of a Complex Shaped Steel Part During Hardening Heat Treatment**

V. Marje, Bharat Forge Ltd.; S. Kulkarni, Kalyani Carpenter Special Steels Ltd.; A. Puranik, Bharat Forge Ltd., Pune; G. Balachandran, Indian Institute of Technology – Madras

**3 p.m.**  
**Cold Stampable 1,550-MPa Flash Bainite Sheet Metal for B-Pillars**

G. Cola, Flash Bainite

**4 p.m.**  
**Improving Spheroidization Effectiveness of Medium-Carbon Alloy Wire Rod**

L. Li, Z. Bay, Y. Kuo, Y. Lin, China Steel Corp.

**4:30 p.m.**  
**On the Mechanism of Microalloying and Macrosegregation Coupled Phenomena for Interdendritic Longitudinal Midface Surface Crack in Continuous Casting of Steel**

M. El-Bealy, Royal Institute of Technology

**2 p.m. — Energy & Utilities — Panel: Natural Gas Supply & Demand Dynamics**  
**Room 4**

Session Chairs: Richard Ricks, Columbia Gas/NiSource; Dave Rohaus, U. S. Steel Research and Technology Center

**2 p.m.**  
**Panel Discussion**

J. Cardiff, ConocoPhillips

Also representatives from: pipeland infrastructure, steel pipe, LNG export and power generation

**2 p.m. — Project & Construction Management — Project Management Success**  
**Room 3**

Session Chairs: Barry Felton, ArcelorMittal Burns Harbor; Kurt Schmiegel, DLZ Industrial Surveying Inc.; Ted Vrehas, Graycor Industrial Constructors Inc.; John McKenna, Hayes Mechanical

**2 p.m.**  
**ArcelorMittal Indiana Harbor No. 7 Blast Furnace Campaign Extension Project**

J. Seaman, ArcelorMittal Indiana Harbor



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**Monday, 4 May • Afternoon****2:30 p.m.****Successfully Constructing a Partnership While Building a Remelting and Forging Facility***J. Seitz, Carpenter Technology Corp.; M. Pace, L. Sellenraad, Turner Construction Co.***3 p.m.****Mill Stand Replacement and New Automation for Special Steel Plate Mill VDM Metals GmbH Siegen***W. Spies, S. Krämer, SMS Siemag AG***3:30 p.m.****Contributions of SMS Siemag as OEM Mill Supplier to Project Cost Saving in Plant Civil Engineering, Construction and Maintenance***W. Spies, SMS Siemag AG***4:30 p.m.****Conversion to the World's First Top-Loading Twin-Shell Fin-Type® Anode at SSAB***R. Strain, Primetals Technologies USA LLC; T. Sprague, D. Begyn, SSAB***2 p.m. — Maintenance & Reliability —  
Rolling Mill Reliability  
Room 6***Session Chairs: Ken Flowers, Butech Bliss; Bridget Darby, Hyson; Randy Heisler, Life Cycle Engineering***2 p.m.****Comparison of Driveshaft Concepts for Rolling Mill Main Drives***J. Mackel, Voith Turbo GmbH & Co. KG; B. Schlecht, H. Graneß, Technische Universität Dresden; P. Grawenhof, Voith Turbo GmbH & Co. KG***2:30 p.m.****Modernized Lock Ring Design Optimizes Roll Assembly Process***T. Gaines, D. Frank, Barnes Group***3 p.m.****New DanJoint High-Performance Oil-Lubricated Gear Spindles for Essar Algoma Hot Strip Mill, Ontario, Canada***F. Palagiano, A. Donadon, M. Codarin, G. Tiussi, P. Palma, M. Rugo, Danieli***3:30 p.m.****Bearing Failures in Steel Mill Applications***B. Nathwani, NSK Corp.***4 p.m.****New Coiling/Uncoiling Technology***R. Aidun, Parker Hannifin Corp.***4:30 p.m.****The Estimation and Improvement to Mill Spindle Fatigue Strength at the Shape Mill***N. Marukado, K. Yamamura, S. Tanaka, JFE Steel Corp.***Tuesday, 5 May 2015  
Morning Sessions****10 a.m. — Safety & Health — Safety & Health  
Room 23***Session Chairs: Bernie Quinn, AM Health & Safety Inc.; Malcom Dunbar, Edw. C. Levy Co.; Pat McCon, Zurich Services Corp.***10 a.m.****Qualified People – It Is a Safety Thing***J. Rachford, Nucor Steel Gallatin***10:30 a.m.****Case Studies of 23 Workplace Accidents and Their Causes***D. Kobernuss, D&B Kobernuss Consultants***10 a.m. — Environmental — Water  
Systems & Treatment  
Optimization  
Room 5***Session Chair: David Gilles, Sage Environmental***10 a.m.****Modern Wastewater Treatment in Cokemaking Plants — A New Way for Water Recycling!***K. Stenzel, H. Thielert, ThyssenKrupp Industrial Solutions AG***10:30 a.m.****Water Quality Improvement of Cooling Water for Heating Furnace***T. Hamamoto, Godo Steel Ltd.***11 a.m.****Application of Process Water Treatment and Reuse Technologies to Minimize Mill Makeup Water Supply and Wastewater Discharges***G. Amendola, Amendola Engineering Inc.; M. Grabigel, Thomas Strip Steel Corp.; M. Oxsalida, M. Amendola, Amendola Engineering Inc.***11:30 a.m.****Case History for Upgrade of the Biological Wastewater Treatment System at a Coke Plant in China***S. Shelby Jr., R. Kirkland, ENVIRON International Corp.***10 a.m. — Cokemaking/ICSTI — Coal  
Quality & Blend Formulation  
Room 21***Session Chairs: Jean-Paul Gaillet, Centre de Pyrolyse de Marienau; Karen Brinker, ThyssenKrupp Industrial Solutions AG*



Tuesday, 5 May • Morning

10 a.m.

**No. 1 Battery Collecting Main Replacement and Roof Repair Project**

*N. Singh, ArcelorMittal Burns Harbor; T. Candiano, ArcelorMittal Burns Harbor; D. Heinz, ArcelorMittal Burns Harbor*

11 a.m.

**Radar Technology-Based Oven Identification, Auto Machine Positioning, Interlocking and Level 2 Coke Oven Batteries Heating Control Management System**

*M. Singh, Lotus Wireless Technologies India Private Ltd.*

11:30 a.m.

**Improvements in the Operation of Coke Plants Through Alignment Process Optimization**

*F. Marsonet, E. La Bruna, Janus Automation*

**10 a.m. — Ironmaking/ICSTI —  
Ironmaking Energy Studies  
Room 25A**

*Session Chairs: Chris Pistorius, Carnegie Mellon University; Sha Yongzhi, CISRI; Parwaiz Khan, Tuzawraqi Steel Mill*

10 a.m.

**Carbonization of Coal and Wood and Rate Enhancement: Effect of Semi-Char and Semi-Charcoal in Composite Pellets**

*T. Usui, H. Konishi, Osaka University; K. Ichikawa, JFE Steel Corp.; F. Pena, M. Souza, A. Xavier, P. Assis, Universidade Federal de Ouro Preto*

10:30 a.m.

**Development of Nut Coke Activation for Energy-Efficient Blast Furnace Operation**

*M. Lundgren, L. Sundqvist Ökvist, Swerea MEFOS AB; C. Brandell, Luossavaara-Kiirunavaara AB (LKAB)*

11 a.m.

**Economical Feasibility of the Use of Biogas in Iron- and Steelmaking**

*K. Calixto, M. Martins, P. Santos Assis, Universidade Federal de Ouro Preto*

11:30 a.m.

**Natural Gas in Ironmaking: On the Use of DRI and LRI in the Blast Furnace Process**

*J. Gibson, P. Pistorius, Carnegie Mellon University*

**10 a.m. — Ironmaking/ICSTI — Blast  
Furnace Slags  
Room 25B**

*Session Chairs: Taijun Yang, Beijing Iron and Steel; Alexander Babich, RWTH Aachen University; Glenn Biever, Vesuvius USA*

10 a.m.

**Influence of  $Al_2O_3$  Content on the Properties of the Slag and Blast Furnace Efficiency**

*F. Rocha da Silva, S. Guerra, A. Baltazar, G. Defendi, Vale S.A.*

11 a.m.

**Research on Blast Furnace Operation With High-Alumina Slag in Meishan Steel**

*H. Han, Meishan Steel; F. Shen, Northeastern University; Z. Zhang, Meishan Steel; X. Jiang, Northeastern University; L. Li, Anhui University of Technology; G. Wei, Northeastern University*

11:30 a.m.

**Theoretical Analysis of  $Al_2O_3$  Behaviors in Blast Furnace Ironmaking and Proper  $MgO/Al_2O_3$  Ratio in Slag**

*H. Zheng, F. Shen, X. Jiang, G. Wei, Northeastern University; Y. Shen, Monash University*

**10 a.m. — Ironmaking/ICSTI — Blast  
Furnace Cohesive Zone  
Room 25C**

*Session Chairs: Cyro Takano, University of São Paulo; Ryan Hershey, Vesuvius USA*

10 a.m.

**Behavior of Different Ferrous Materials in the Blast Furnace Cohesive Zone**

*C. Loo, University of Newcastle; D. O'Dea, BHP Billiton*

10:30 a.m.

**Experimental Analysis of the Interfacial Wetting Phenomena Between Slag and Coke Surface Under Simulated Conditions of the Bosh Region of Blast Furnace**

*A. Bhattacharyya, J. Schenk, G. Arth, Montanuniversität Leoben; H. Stocker, voestalpine Stahl Donawitz GmbH; C. Thaler, voestalpine Stahl GmbH*

11 a.m.

**Primary Slags Formation Behaviors of Pellets in Cohesive Zone of Blast Furnace**

*S. Wu, X. Liu, M. Kou, University of Science & Technology Beijing; J. Zhu, Baoshan Iron and Steel Co. Ltd.; K. Zhang, W. Huang, University of Science & Technology Beijing*

11:30 a.m.

**Wettability of Graphite Substrates Against Molten  $CaO-SiO_2-Al_2O_3-MgO$  Slags**

*N. Saito, K. Yasutake, S. Sukenaga, K. Nakashima, Kyushu University*

**Tuesday, 5 May • Morning****10 a.m. — Ironmaking/ICSTI — Direct Reduction Ironmaking III — DRI Raw Materials**  
**Room 26A**

Session Chairs: Elaine Chen, ArcelorMittal USA; Ranjit Panigrahi, CV Engineering; Jeffrey Myers, Midrex Technologies Inc.

**10 a.m.**  
Characterization of DR Pellets for DRI Applications  
B. Monsen, E. Homassen, I. Bragstad, E. Ringdalen, P. Høgaas, SINTEF Materials and Chemistry

**10:30 a.m.**  
Improvement of Coating to the Iron Ore Pellet at the Direct Reduction Plant of Tenaris-Siderca  
A. Graziutti, H. Nuccetelli, D. Guido, F. Ajarco, Tenaris-Siderca

**11 a.m.**  
DRI Formation and Carbon Precipitation in Shaft Furnaces  
J. D'Abreu, Pontifical Catholic University, PUC-Rio; H. Kohler, Iron & Steelmaking Group; M. Otaviano, Samarco; E. Tinoco Falero, Pontifical Catholic University, PUC-Rio

**11:30 a.m.**  
Sticking/Clustering Test of Optimization for RD Iron Ore Pellets  
M. Oreggioni, Instituto Argentino de Siderurgia; A. Graziutti, Tenaris-Siderca; O. Baglivo, D. Costoya, Instituto Argentino de Siderurgia; D. Guido, H. Nuccetelli, Tenaris-Siderca

**10 a.m. — Ironmaking/ICSTI — Blast Furnace Equipment & Maintenance I — Staves**  
**Room 26B**

Session Chairs: Rudy Talkamp, CIM-Tech Inc.; Edward Burns, Fedmet Resources Corp.

**10 a.m.**  
ArcelorMittal IH-7 Blast Furnace Stave Circuit Failure Remediation Techniques  
J. Bobek, S. Trenkinshu, D. Zuke, T. Langdon, ArcelorMittal

**10:30 a.m.**  
Thermal Deformation and Stress Analysis of Blast Furnace Copper Stave  
Q. Liu, S. Cheng, Y. Li, University of Science & Technology Beijing; J. Niu, D. Liu, Hebei Wanfeng Metallurgical Spare Parts Co. Ltd.

**11 a.m.**  
Thermal and Mechanical Parametric Study for Copper Staves in the Blast Furnace  
H. Yoon, W. Choi, Hyundai Steel Co.

**11:30 a.m.**  
Blast Furnace Copper Stoves Performance and Enhancements  
T. Smith, M. Mattich, Berry Metal Co.

**10 a.m. — Electric Steelmaking — EAF Start-Ups & Revamps**  
**Room 24**

Session Chairs: Sam Matson, CMC Americas; Gerry Gillen, Nucor Steel–Indiana; Bob LaRoy, Steel Dynamics Inc. – Flat Roll Div. – Butler

**11 a.m.**  
Start-Up and Commissioning of the DRI Handling System for Nucor Hertford's EAF  
K. Shoop, Tenova Core; B. Trumble, Nucor Steel; F. Memoli, Tenova Core

**11:30 a.m.**  
Investigation of Foaming Slag in Electric Arc Furnace  
W. Bielefeldt, R. Almeida, D. Vieira, F. Almeida, A. Vilela, Federal University of Rio Grande do Sul

**10 a.m. — Oxygen Steelmaking — Maintenance & Refractories**  
**Room 19**

Session Chairs: James Finley, ArcelorMittal Indiana Harbor; Nenad Radoja, Connors Industrials Inc.; Jeff Jones, Magnesita Refractories; Hans Joerg Junger, RHI Canada

**10 a.m.**  
Cleaning Mouth Results in Aperam South America AOD Using Slagless Cleanup  
B. Maia, B. Orlando de Almeida Santos, F. Silveira Garajau, Lumar Metals; M. De Souza Lima Guerra; O. Augusto Cunha Teixeira, M. Coelho, H. Souza Barcelos, APERAM

**10:30 a.m.**  
Danieli and NSENGI Approach the International BOF Market  
G. Staudinger, W. Vortrefflich, Danieli Linz Technologies

**11 a.m.**  
Improved Q-BOP Lower Hood Design Leads to a Longer Life  
P. Cianci, C. Fahs, U. S. Steel – Gary Works; R. Talkamp, F. Hyle, CIM-Tech Inc.

**11:30 a.m.**  
BOF Slop Detection — Savings Potential With Real-Time Slop Detection and Mitigation Technology  
J. Kafie, B. Babak, V. Scipolo, Tenova Goodfellow Inc.

Tuesday, 5 May • Morning

**10 a.m. — Specialty Alloy & Foundry —  
Specialty Alloy — Part I  
Room 12**

Session Chairs: Andy Pinskey, Holland Manufacturing Corp.;  
Kevin Ninehouser, Latrobe Specialty Metals Inc.; Allen Chan,  
Praxair Inc.

**10 a.m.**  
Latest Developments in Abrasive Cutting and Grinding of  
Large-Scale Cast Parts

M. Foerster, BRAUN Machine Technologies LLC; G. Richter,  
BRAUN Maschinenfabrik GmbH

**10:30 a.m.**  
A Comparative Study of Test Material and Castings to  
Predict Mechanical Properties of Steel Castings and  
Design of Heat Treatment Cycle

M. Gomes, Harrison Steel Castings Co.

**11 a.m.**  
High-Performance Abrasive Cutoff Machines for Forging  
Applications

C. Lieberknecht, BRAUN Machine Technologies LLC;  
G. Richter, BRAUN Maschinenfabrik GmbH

**10 a.m. — Continuous Casting —  
Mold Technology for High  
Productivity & Long Life  
Room 22**

Session Chairs: Phil Ponikvar, SARRALLE USA Inc.; Chad  
Donovan, SMS Millcraft LLC

**10:30 a.m.**  
Special Technologies and New Developments to Improve  
Slab Quality

W. Emling, SMS Siemag LLC; D. Lieftucht, J. Wans,  
C. Geerkens, SMS Siemag AG

**11 a.m.**  
Results From New Danieli Power Mould® Applications  
and Further Development of This Technology

E. Franceschinis, R. Buffoli, Danieli & C. Officine  
Meccaniche SpA

**10 a.m. — Hot Sheet Rolling —  
Technological Methods for  
Improving the Hot Sheet  
Rolling Process  
Room 13**

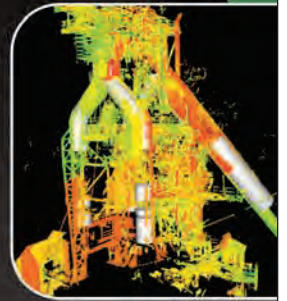
Session Chairs: Nancy Hake, Falk PLI; Rob Brunelli,  
TMEIC Corp.

**10 a.m.**  
An On-Line Model of Work Roll Temperature With  
Variable Cooling Rate Along the Roll Length

E. Nikitenko, United States Steel Corporation

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**Tuesday, 5 May • Morning****10:30 a.m.**

**New Control Technique for Reducing the Likelihood of Cobbles in the Tandem Rolling of Hot Metal Sheet**  
*J. Pittner, University of Pittsburgh; M. Simaan, University of Central Florida*

**11 a.m.**

**Gauging Wear on Hot Strip Mill Pusher Furnace Hearth/Reduction of Furnace Hearth Tears in Product**  
*L. Gansho, J. Chapko, R. Svenningsen, ArcelorMittal; N. Hake, Falk PLI*

**11:30 a.m.**

**Cause and Solution of the Slab Camber in the Slab Sizing Press**  
*T. Onishi, JFE Steel Corp.*

### **10 a.m. — Cold Sheet Rolling — Pickling & Welding** **Room 14**

*Session Chair: David Price, ArcelorMittal USA*

**10 a.m.**

**Pickling and Tandem Cold Rolling Technologies for Ternium Mexico**  
*M. Fujii, Primetals Technologies Japan Ltd.; R. Freitas, F. Rodríguez P., C. Gómez de la Garza, J. Mendez, TERNIUM; I. Maeno, Y. Kai, Primetals Technologies Japan Ltd.; H. Takahashi, Hitachi Ltd.*

**10:30 a.m.**

**Energy Savings in the System Pickling/Acid Recovery: The New Eco-Mode**  
*F. Baerhold, A. Stingl, S. Mitterecker, ANDRITZ AG*

**11 a.m.**

**Application of Lower-Cost Gas to a Laser Welding**  
*Y. Tatara, T. Matsuko, JFE Steel Corp.*

**11:30 a.m.**

**Development of New Mash Seam Welder (Cross Seam Welder, CSW) Compatible With Continuous Rolling of Steel Sheets at Thicknesses up to 6.5 mm**  
*Y. Watanabe, Mitsubishi Heavy Industries Ltd.; N. Tominaga, H. Tadokoro, Primetals Technologies Japan Ltd.; K. Sato, H. Tagata, Mitsubishi Heavy Industries Ltd.*

### **10 a.m. — Rod & Bar Rolling — Rod & Bar Rolling Innovations** **Room 9**

*Session Chairs: Dan Davies, ANDRITZ METALS Inc.; John Sadler, ArcelorMittal Indiana Harbor; Gary Henderson, Nucor Steel-Berkeley*

**10 a.m.**

**Q-Robot ROLL — Vision-Based Automatic Deburring Robot for Cold Billets**  
*R. Ferrari, F. Romano, I. Visentini, Danieli Automation S.p.A.*

**10:30 a.m.**

**Modern Rolling for Long Products — Upgrading the Electrics**  
*E. Thorstenson, Russula Corp.*

**11 a.m.**

**WINLINK Innovative Concept for Direct Rolling of Bars**  
*F. Toschi, Siemens; G. Hohenbichler*

**11:30 a.m.**

**Increasing Annual Production Capacity of Bar Rolling Mill No. 2 Plant by 30% Through Small Investment Utilizing Existing Plant Equipment**  
*H. Osman, A. Sewaif, AL-EZZ Dekheila Steel Co. (EZDK)*

### **10 a.m. — Pipe & Tube — Pipe & Tube Technology — Part I** **Room 16**

*Session Chairs: Russ Olgin, California Steel Industries Inc.; David Johnson, Paragon Industries Inc.; Susan Conley, Quaker Chemical Corp.*

**10 a.m.**

**In the Hot Spot of the OCTG Market — The Vallourec 7-Inch OD Seamless Pipe Mill Plant in Ohio**  
*G. Grandi, E. Cernuschi, V. Della Rocca, Danieli & C. Officine Meccaniche SpA*

**10:30 a.m.**

**Developing and Manufacturing Larger-Diameter P110 Seamless Tube at TMK-IPSCO**  
*K. Li, M. Panzeri, TMK-IPSCO*

**11 a.m.**

**Modernization of Rolling Mills for Seamless Tubular Products**  
*T. Wagner, SMS Meer GmbH*

**11:30 a.m.**

**New State-of-the-Art Roller Hearth Furnace for Stress Relieving, Annealing and Normalizing of Steel Tubes at Michigan Seamless Tube**  
*S. Brown, A. Trefz, CMI Industry Americas Inc.; L. Whitver, C. Tinsley, R. Barber, Michigan Seamless Tube*

### **10 a.m. — Metallurgy — Steelmaking & Casting — Clean Steel — Characterization Techniques** **Room 20**

*Session Chairs: Howard Piolet, ArcelorMittal USA Research Laboratories; Bryan Webler, Carnegie Mellon University; Bill Jones, U. S. Steel – Granite City Works*

**10 a.m.**

**Step Milling as a Tool for Characterizing Defects in Slabs at ArcelorMittal**  
*F. Demmon, R. Gass, ArcelorMittal USA; H. Yin, ArcelorMittal Global R&D*





Tuesday, 5 May • Morning

10:30 a.m.

**Improved Methodology for Automated SEM/EDS Non-Metallic Inclusion Analysis of Mini-Mill and Foundry Processed Steels**

*O. Adaba, M. Harris, S. Lekakh, R. O'Malley, V. Richards, Missouri University of Science and Technology*

11 a.m.

**Optimizing the Speed and Quality of Automated Inclusion Analysis**

*D. Tang, P. Pistorius, Carnegie Mellon University*

11:30 a.m.

**Characterization of Inclusions in Heavy Rail Steels Using Micro-CT Technology**

*L. Zhang, W. Yang, X. Zhang, University of Science & Technology Beijing; X. Xiao, Argonne National Laboratory*

**10 a.m. — Metallurgy — Processing, Products & Applications — Non-Metallic Inclusions**

**Room 10**

*Session Chair: Qiulin Yu, Nucor Steel Tuscaloosa Inc.; Yury Krotov, Steel Dynamics Inc. – Structural & Rail Div.*

10 a.m.

**Effect of Rare Earth Oxides on the Rolling Performance of Grain-Refined 1030**

*R. Tuttle, Saginaw Valley State University; J. Lewandowski, R. Tomazin, Case Western Reserve University*

10:30 a.m.

**Characterization of MnS Inclusions in Heavy Rail Steels**

*L. Zhang, X. Zhang, University of Science & Technology Beijing*

11 a.m.

**FeSi Residuals and Its Effects on Steel Cleanliness**

*A. Pitts, Nucor Steel Tuscaloosa Inc.*

11:30 a.m.

**Numerical Simulation on Migration Behavior of Inclusions Accompanied by Voids Formation and Evolution During CSP Hot Rolling Process**

*J. Li, Jiuquan Iron & Steel (Group) Co., Ltd.; J. Ge, S. Cheng, Y. Li, University of Science & Technology Beijing; C. Chang, Jiuquan Iron & Steel (Group) Co. Ltd.*

**10 a.m. — Energy & Utilities — Panel: Practical Energy Savings Projected Implemented by Steel Producers**

**Room 4**

*Session Chairs: Larry Fabina, ArcelorMittal Burns Harbor; Matt Druciak, Tenova Core*

10 a.m.

**Panel Discussion**

*Panelists from ArcelorMittal, Nucor and United States Steel Corporation*

**10 a.m. — Computer Applications — Using Data**

**Room 7**

*Session Chairs: Michael Dudzic, ArcelorMittal Dofasco Inc.; Mike McCabe, U. S. Steel – Great Lakes Works*

10 a.m.

**Asset and Energy Optimization: Calming Cloud Over Operations**

*O. Bascur, OSIssoft LLC*

10:30 a.m.

**The Dirty Little Secrets of Cleansing Big Data**

*P. Gallagher, Management Science Associates*

11 a.m.

**Use of Historian Data for Time Balance Analysis of EAF Process**

*J. Sagasti, AustralTek*

**10 a.m. — Maintenance & Reliability — Analysis Methods for Maintenance & Reliability**

**Room 6**

*Session Chairs: John Schlobohm, American Chemical Technologies Inc.; David Aguirre, California Steel Industries Inc.; Jim Smith, IVC Technologies*

10 a.m.

**Structural Integrity Analysis and Stability Improvement for a Hot Metal Car**

*J. Martins, L. Brandão, Magnor*

10:30 a.m.

**Improved Reliability and Cost Avoidance at ArcelorMittal Steel Through the Root Cause Failure Analysis Process**

*C. Kuntz, L. Frey, ArcelorMittal Burns Harbor*

11 a.m.

**Monitoring of Stave and Castable Refractory Wear in Blast Furnaces**

*A. Sadri, W. Ying, HATCH Ltd.*

11:30 a.m.

**Analysis of the Root Cause and Consequences of Extreme Overheating of Dry Rolls in a CSP Tunnel Furnace**

*J. Echlin, R. Pankiw, Duraloy Technologies Inc.; B. Seres, Steel Dynamics Inc.; J. Pellegrino, RJ Lee Group*

**Tuesday, 5 May • Morning****10 a.m. — Lubrication & Hydraulics —  
New Technology in Lubrication  
& Machinery Components to  
Improve Equipment Efficiency  
Room 11**

Session Chairs: Salvatore Rea, Anderol Specialty Lubricants;  
Jim Sidow, Fuchs Lubricants Co.

**10:30 a.m.**

**Anatomy of Circulating Oil Systems for Lubrication**  
K. Marthaler, SKF Lubrication Systems USA

**11 a.m.**

**The Timken ADAPT® Bearing**  
N. Los, The Timken Co.; J. Durand, Timken Europe

**11:30 a.m.**

**Oil Condition Monitoring and Interpretation of Test  
Results**  
A. Guven, Shell Global Solutions

**10 a.m. — Refractory Systems —  
Refractories for Blast Furnace  
Maintenance  
Room 15**

Session Chairs: Jimmy Barrett, Allied Mineral Products Inc.;  
Rob Doty, IMACRO Inc.; Lionel Rebouillat, Pyrotek Canada  
Inc.

**10 a.m.**

**Wear Monitoring of Furnace Refractories**  
T. Smith, Berry Metal Co.; F. Schneck, FP International;  
B. Stackhouse, ArcelorMittal Cleveland

**10:30 a.m.**

**The Application Progress of High-Radiative Coating  
Technology in Ironmaking Industry**  
H. Zhou, C. Liu, L. Li, X. Yang, S. Zhang, Shandong Huimin  
Science & Technology Co. Ltd.

**11 a.m.**

**Study of Blast Furnace Taphole Comprehensive Repair  
Technology**  
X. Tang, H. Li, X. Liu, Y. Fan, Central Research Institute of  
Building and Construction Co. Ltd.

**11:30 a.m.**

**Determination of Maximum Admissible Stress on Coke  
Oven Walls**  
M. Landreau, D. Isler, CPM

**10 a.m. — Material Handling/  
Transportation & Logistics —  
Panel: Addressing Challenges  
Moving Steel  
Room 1**

Session Chairs: Donnie Spencer, Nucor Steel Tuscaloosa  
Inc.; David Haslar, TimkenSteel Corp.

**10 a.m.**

**Panel Discussion**  
Moderator: A. Welch, Olympic Steel Inc.  
Panelists:

R. Roberson, Nucor Steel  
M. Wastchak, Kinder Morgan Bulk Terminals  
L. Iharosy, CN North America  
K. Jordan, CRST Logistics Inc.

**Tuesday, 5 May 2015  
Afternoon Sessions****Noon — Ironmaking/ICSTI Poster Session  
Outside of Rooms 25–26**

Note: The Ironmaking posters will be on display beginning  
Sunday, 3 May 2015, through Tuesday, 5 May 2015. The  
authors will be available at their posters for discussion during  
this Tuesday afternoon session from noon to 2 p.m.

**Technological Improvements to Increase Intensity of  
Operation of Titania-Magnetite Blast Furnace**  
Y. Gordon, HATCH Ltd.; S. Filatov, NLMK Russia;  
S. Zagainov, Ural Federal University; V. Filippov, NTMK-EVRAZ

**Influence of Burden Softening and Melting Properties on  
Cohesive Zone Shape and Gas Flow in Blast Furnace**  
G. Zhao, S. Cheng, University of Science & Technology  
Beijing

**Computer Simulation of Combustion Process of Kalugin's  
Top Combustion Hot Blast Stove**  
K. Yang, S. Cheng, C. Chen, University of Science &  
Technology Beijing

**Comminution Process: How to Turn the Ore Iron  
Processing More Economic and Efficient**  
G. Gois, Universidade Federal de Ouro Preto

**Preparation of Wustite by Decomposition of Hydrous  
Ferrous Oxalate and Redox Between Ferric Oxide and  
Iron**  
C. Bai, J. Xu, D. Wang, Z. Hu, W. He, L. Wen, Chongqing  
University



Tuesday, 5 May • Afternoon

**Origin and Migration Behavior of Zinc in Blast Furnace Hearth Brittle Layer**

Z. Liu, K. Jiao, J. Zhang, University of Science & Technology Beijing; Z. Zhao, Shougang Research Institute of Technology; D. Huang, X. Jia, University of Science & Technology Beijing; Q. Tang, Anshan Iron and Steel Group Corp.; T. Yang, University of Science & Technology Beijing

**Research of Comprehensive Regulation Technology for Hearth Protective Layer of Blast Furnace Longevity**

J. Kexin, Z. Jianliang, L. Zhengjian, Y. Tianjun, N. Xiaojun, University of Science & Technology Beijing

**Theory and Practice of Carbon Composite Brick Applied in Blast Furnace Hearth and Bottom**

Z. Jianliang, J. Kexin, L. Zhengjian, Y. Tianjun, X. Tao, University of Science & Technology Beijing

**Reduction Roasting of Boron-Bearing Iron Concentrate for Boron and Iron Recovery**

P. Gao, J. Yu, Y. Han, Northeastern University; X. Wei, The State University of New York Polytechnic Institute; Y. Sun, Northeastern University

**Contribution to the Understanding and Modeling of Iron Ore Granulation Inside Industrial Drums**

J. Douce, ArcelorMittal; F. Radjai, University of Montpellier 2; A. Koltsov, ArcelorMittal; N. Berger, E. Azema, University of Montpellier 2

**Effect of Mill Scale Adding Methods on NO<sub>x</sub> Emission of Coke Combustion During Iron Ore Sintering**

S. Wu, Z. Que, B. Su, G. Zhang, C. Hou, University of Science & Technology Beijing

**Ore-Blending Optimization Expert System Based on the High-Temperature Characteristics of Iron Ores**

T. Song, S. Wu, B. Su, G. Zhang, F. Pimenta, H. Pimenta, University of Science & Technology Beijing

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**Tuesday, 5 May • Afternoon****Liquid Absorbability of Limonite and Its Influence on the Sinter Indexes***H. Xue, S. Wu, B. Su, G. Zhang, T. Song, Z. Que, University of Science & Technology Beijing***Mineralization of Iron Ore Fines in the Process of CAP***G. Li, T. Jiang, Z. Yu, Y. Zhang, Q. Li, Central South University***Dynamic Model of Phosphorus Migration in Coal-Based Reduction of Phosphorus-Content Oolitic Hematite Ore***Y. Han, Z. Li, P. Gao, Y. Sun, Northeastern University***Numerical Analysis on Operation Parameters Optimization of Shaft Furnace With Different Areal Gas Distribution Pipe Arrangement***K. Du, S. Wu, M. Kou, Z. Zhang, University of Science & Technology Beijing***Proper Methods of Adding MgO-Bearing Flux in Blast Furnace Process***F. Shen, Q. Wen, X. Jiang, H. Zheng, Q. Gao, Y. Hu, G. Wei, Northeastern University; Y. Shen, Monash University***Reaction Characteristics of Carbothermic Reduction With High Pellets Bed***X. Jiang, Northeastern University; S. Liu, China Steel Corp.; W. Lu, McMaster University; T. Huang, China Steel Corp.; G. Zhang, H. Guo, Northeastern University; G. Shiau, China Steel Corp.; H. Zheng, F. Shen, Northeastern University***Discussion on Relationship Between Smelting Parameters of Large-Capacity BF and Metallurgical Performance of Iron-Bearing Burden***J. Sun, H. Chen, Z. Ma, J. Wu, Shougang Research Institute of Technology***Competitiveness Analysis of Large-Capacity Blast Furnace***H. Chen, J. Sun, Z. Ma, J. Wu, Shougang Research Institute of Technology***Research on Metallurgical Properties of Different Types of Titanium Resources***J. Wu, H. Chen, Z. Ma, J. Sun, Shougang Research Institute of Technology***Optimal Method for Renewal Sintering Exhaust Gas Treatment System***S. Mori, JFE Steel Corp.***A Thermo-Energetic Balance About the Use of Biogas in Blast Furnaces***K. Calixto, M. Eleutério, P. Assis, Universidade Federal de Ouro Preto***Effect of SiO<sub>2</sub> on the Compressive Strength and Hot Resistance Abrasion of Self-Reducing Pellets Bonded With Portland Cement***A. Nogueira, Universidade de São Paulo***Research on Transfer and Its Significance of MgO in Blast Furnace Burden From Sinter to Pellet in Shougang Jingtang***P. Yuan Dong, Shougang Research Technology Beijing; W. Shengli, University of Science & Technology Beijing; Z. Zhixing, Shougang Research Institute of Technology; A. Gang, Shougang Jingtang***Effect of Coke Breeze Distribution on Coke Combustion Rate of the Quasi-Particle***H. Ogi, T. Maeda, K. Ohno, K. Kunitomo, Kyushu University***2 p.m. — Safety & Health — Don B. Daily Safety Grant Winner Awardees Room 23***Session Chairs: Brad Bradley, California Steel Industries Inc.; Jim Alesia, Steel Dynamics Inc. – Structural & Rail Div.; Pat McCon, Zurich Services Corp.***2 p.m.****Ergonomic Interventions for Steel Manufacturing Workers***X. Ning, B. Hu, I. Almuheidib, F. Alessa, J. Kang, West Virginia University***2:30 p.m.****Near Miss Reporting to Enhance Safety in the Steel Industry***E. Marks, I. Awolusi, X. Shen, University of Alabama***3 p.m.****Interactive Incident Visualization for Steel Industry Safety Training***J. Moreland, S. Nakayama, J. Zhang, Purdue University Calumet; W. Campbell, Nucor Sheet Mill Group; C. Zhou, Purdue University Calumet***3:30 p.m.****Safety Leadership***M. Dunbar, Edw. C. Levy Co.***4 p.m.****Differences in Surface Lead Concentrations in a Steel Mill***J. Hoover, Steel Dynamics Inc.; J. Harney, CDC; J. Steensma, Washington University in St. Louis***4:30 p.m.****Learning Management System (LMS): Integrated Solution for Compliance Requirements***E. La Bruna, M. Barbieri, Janus Automation*



Tuesday, 5 May • Afternoon

## 2 p.m. — Environmental — Energy Efficiency & Management of Wastes Room 5

Session Chair: Conrad D'Costa, ArcelorMittal Dofasco Inc.

**2 p.m.**  
Producing Synthetic Fuel From CO<sub>2</sub> Emissions and Excess Heat From Steel Facilities  
D. Banitt, J. Horn, NewCO<sub>2</sub>Fuels Ltd.

**2:30 p.m.**  
Upgrade Your Fans to Reduce Power Consumption, Carbon Footprint and Manufacturing Costs  
A. Ray, ProcessBarron

**3 p.m.**  
EAF ID Fan Energy Efficiency Upgrade Retrofit Process  
D. Banyay, Robinson Fans Inc.

**3:30 p.m.**  
Fan Energy Optimization Projects: What Approach Provides the Best Odds for Success?  
V. Martin, Flowcare Engineering Inc.

**4 p.m.**  
Raw Material Cost Reduction in Steelmaking by Reclaiming Calcium and Other Metals From Slag Piles  
M. Wyrsta, Lixivia

## 2 p.m. — Cokemaking/ICSTI — Coke Oven Battery Construction & Repairs Room 21

Session Chairs: Mike Best, Shenango Inc.; Toni Brayton, U. S. Steel – Gary Works

**2 p.m.**  
NFPA Combustible Dust Standards and Cokemaking — How These Regulations May Affect You  
F. Owens, V. Jones, HOH Engineers Inc.



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**Tuesday, 5 May • Afternoon****2:30 p.m.**

The Coke Oven Temperature Impact on the Wastewater Biological Treatment System  
C. Cheng, China Steel Corp.

**3 p.m.**

Determination of “End of Coking” in Byproduct Recovery Metallurgical Cokemaking  
M. Lumadue, S. Thomas, S. Pisula, M. DeLibero, United States Steel Corporation

**3:30 p.m.**

Full-Scale Treatment of Coke Oven Wastewater Using Immersed Membrane Biological Reactor Technology  
A. Kuljian, Tetra Tech; J. Penny, GE Water & Process Technologies; P. Champagne, Tetra Tech

**4:30 p.m.**

Quality and Classification of Metallurgical Coke  
R. Pearson, D. Pearson, J. Park, Y. Jiao, Pearson Coal Petrography

## 2 p.m. — Ironmaking/ICSTI — Reduction Phenomena Room 25A

Session Chairs: Stuart Street, AK Steel Corp. – Dearborn Works; Seiji Nomura, NSSMC; Tateo Usui, Osaka University

**2 p.m.**

Effects of CaO/CaCO<sub>3</sub> on the Carbothermic Reduction of Titanomagnetite Ores  
S. Jung, Pohang University of Science and Technology; E. Choi, POSCO

**2:30 p.m.**

Influence of Al<sub>2</sub>O<sub>3</sub> and Basicity on Reducibility of Sinter Containing High-Al<sub>2</sub>O<sub>3</sub>-Containing Ore  
S. Shin, Yonsei University; W. Kim, POSCO Research Group; D. Min, Yonsei University

**3 p.m.**

Self-Reducing Briquettes From Ironmaking Residues: Liquid and Solid Reduction  
J. D'Abreu, E. Tinoco Falero, Pontifical Catholic University, PUC-Rio; L. Ravaiolo, M. Bentes, PUC-Rio Iron & Steelmaking Group

**3:30 p.m.**

Effect of Hydrogen-Enriched Gas on Reduction-Disintegration and Reducibility of Sinter  
X. Jiang, F. Shen, Northeastern University; L. Wang, Shenyang Institute of Engineering; C. Yang, H. Zheng, G. Wei, Q. Tan, Northeastern University

**4 p.m.**

Density Functional Theory Study on the Interaction Mechanism of CO and FeO Surface  
H. Zhong, L. Wen, Chongqing University; C. Zou, Xi'an University of Architecture and Technology; J. Xu, J. Tu, Chongqing University

**4:30 p.m.**

Reduction Mechanism of Rare Earth Bayan Obo Complex Iron by Carbon Monoxide  
X. She, J. Wang, G. Wang, Q. Xue, University of Science & Technology Beijing

## 2 p.m. — Ironmaking — Blast Furnace Hearth Room 25B

Session Chairs: Thomas Colander, Magneco/Metrel Inc.; Jerry Capo, U. S. Steel Research and Technology Center

**2 p.m.**

The End of Carbonaceous Blast Furnace Hearth Working Linings?  
A. Dzermejko, Magneco/Metrel Inc.

**2:30 p.m.**

A CFD Model for Estimating Refractory Erosion and Skull Buildup in the Blast Furnace Hearth  
L. Shao, Northeastern University; S. Louhenkilpi, Aalto University; Z. Zou, Northeastern University; H. Saxén, Abo Akademi University

**3 p.m.**

Influence of Gas Flow Distribution as an Approach to the Blast Furnace Hearth Phenomena  
A. Hirano, B. Silva, ThyssenKrupp CSA; F. Fujihara, Fergus Consult

**3:30 p.m.**

Techniques for Controlling Wear of Hearth Sidewall of Large Blast Furnace at Baosteel  
W. Xu, Baosteel group Co. Ltd.; L. Zhang, Baoshan Iron and Steel Co. Ltd.; X. Mao, Baosteel group Co. Ltd.; J. Zhu, W. Song, Baoshan Iron and Steel Co. Ltd.

**4 p.m.**

Research and Application on Temperature Distribution Control Technology of Blast Furnace Hearth and Bottom  
F. Zhang, Beijing Shougang International Engineering Technology Co. Ltd.; C. Shusen, H. Zhao, USTB; S. Qian, Beijing Shougang International Engineering Technology Co. Ltd.

**4:30 p.m.**

Migration of Erosion and Relationship Between Bottom and Hearth Temperature of Blast Furnace  
Y. Li, S. Cheng, University of Science & Technology Beijing; J. Gao, Jiuquan Iron & Steel (Group) Co. Ltd.

## 2 p.m. — Ironmaking/ICSTI — Blast Furnace Injection Room 25C

Session Chairs: Jerry Nelesen, AKJ Industries Inc.; Frank Huang, ArcelorMittal Global R&D – East Chicago; Veena Sahajwalla, University of New South Wales



Tuesday, 5 May • Afternoon

2 p.m.

Coal-Gas Coinjection in Blast Furnaces: Are There Hidden Benefits?

*M. Geerdes, Geerdes Advies*

2:30 p.m.

Transport Behavior Characterization of Pulverized Coal for Blast Furnace

*P. Gupta, H. Pierret, E. Hess, J. Eymond, G. Lesoin, A. Daelman, S. Zaimi, J. Lebonvallet, D. Vogt, ArcelorMittal*

3 p.m.

Evaluation of PCI Coals in New Injection Facility at CanmetENERGY-Ottawa

*S. Ray, L. Giroux, T. MacPhee, K. Ng, CanmetENERGY-Ottawa; T. Todoschuk, ArcelorMittal Dofasco Inc.*

3:30 p.m.

Combined Blast and Supplemental Fuel Injection Is the Major Way to Improve the Energy Efficiency of Blast Furnace

*Y. Gordon, HATCH Ltd.; N. Spirin, V. Shvidkij, Y. Yaroshenko, Ural Federal University*

4 p.m.

Analysis of Pulverized Coal and Natural Gas Injection on 5,500 m<sup>3</sup> Blast Furnace in Shougang Jingtang

*X. Meng, F. Zhang, W. Wang, L. Li, J. Dai, Beijing Shougang International Engineering Technology Co. Ltd.*

4:30 p.m.

Coke Degradation in Oxygen Blast Furnace Process With High Injection of Hydrogenous Fuel

*P. Wang, Q. Zhang Yue, L. Xming, L. Xin, Anhui University of Technology*

## 2 p.m. — Ironmaking/ICSTI — Direct Reduction Ironmaking IV — Coal-Based DRI

Room 26A

Session Chairs: *Mike Riley, Praxair Inc.; Jan van der Stel, Tata Steel R&D; James Simmons, Tenova Core*

2 p.m.

Start-Up and Operation of World's First Coal Gasification-Based MXCOL<sup>®</sup> DRI Plant

*T. Wieslaw, Midrex Technologies Inc.*

2:30 p.m.

DRI Production Using Coke Oven Gas (COG): Results of Midrex Thermal Reactor System<sup>®</sup> (TRS<sup>™</sup>) Testing and Future Commercial Application

*G. Metius, Midrex Technologies Inc.*

3 p.m.

The Physics Simulation Result for Baosteel COREX Reduction Shaft

*X. Haifa, X. Mao, Baosteel group Co. Ltd.; J. Zhu, Baoshan Iron and Steel Co. Ltd.; W. Xu, Baosteel group Co. Ltd.*

3:30 p.m.

Analysis of Influencing Factors on Silicon Content in Hot Metal From COREX Process

*S. Wu, Y. Jiang, M. Kou, W. Shen, K. Du, University of Science & Technology Beijing*

4 p.m.

Research on Gas-Solid Reduction Reaction Characteristics of Packed Bed in COREX Melter Gasifier

*S. Wu, Z. Zhang, M. Kou, H. Lu, University of Science & Technology Beijing*

4:30 p.m.

Recent Update of BF and FINEX Route Ironmaking Technologies in Korea

*H. Lee, S. Yi, POSCO*

## 2 p.m. — Ironmaking/ICSTI — Ironmaking Raw Materials III — Flux

Room 26B

Session Chairs: *Larry Wolfe, Carmeuse Lime & Stone Inc.; Jan-Olov Wikstrom, Swerea MEFOS*

2 p.m.

Optimizing Flux Addition in the Pellet-DRI-EAF Process Route

*M. Okrutny, J. Bolen, HATCH Ltd.*

2:30 p.m.

Increasing the Value-in-Use of Magnesium Silicate Fluxes: Tailor-Made MgO/SiO<sub>2</sub> Ratio for Each Application

*E. Somolinos, E. Ruisanchez, J. Martinez, Pasek Minerales*

3 p.m.

Evaluation of Proper Dolomite Addition on the Quality and Mineralogy of Vanadium-Titanium Sinter

*X. Xue, M. Zhou, S. Yang, T. Jiang, Northeastern University*

3:30 p.m.

Effect of the Flux Added From Furnace Top on BF Operation at Meishan Steel

*H. Han, Meishan Steel; F. Shen, Northeastern University; Z. Zhang, Meishan Steel; X. Jiang, Northeastern University*

4 p.m.

Influence of MgO, Al<sub>2</sub>O<sub>3</sub> and CaO/SiO<sub>2</sub> on Viscosity of Blast Furnace-Type Slag

*X. Lv, J. Zhang, Z. Yan, C. Bai, Chongqing University*

4:30 p.m.

Study on the Modification and Crystallization behaviors of Blast Furnace Smelt Slag for Mineral Fiber Material

*J. Li, K. Zhao, Y. Zhang, W. Liu, J. Li, Hebei United University*

**Tuesday, 5 May • Afternoon****2 p.m. — Electric Steelmaking — EAF Experiences With DRI**  
**Room 24**

Session Chairs: Lauren Jellison, Nucor Steel–Indiana; Andrew Spencer, Steel Dynamics Inc. – Flat Roll Div. – Butler; Stephan Ferenczy, Steel Dynamics Inc. – Flat Roll Div. – Butler

**2 p.m.**  
**Myth and Realities of Charging DRI/HBI in Electric Arc Furnaces**

J. Madias, Metallon; S. Hornby, Global Strategic Solutions; F. Torre, REFRATEC S.R.L.

**2:30 p.m.**  
**Optimizing Fe Yield in an All-DRI-Fed EAF**

R. González, F. Acosta, ArcelorMittal Lázaro Cárdenas; M. Lowry, ArcelorMittal R&D USA; D. Kundrat, SGL Carbon; A. Wyatt, SGL Group

**3 p.m.**  
**Flexibility in EAF Operations at Nucor Steel–Arkansas With DRI**

T. Tirabassi, I. Valdez, G. Wilson, J. Hicks, D. Pantello, Nucor Steel–Arkansas

**3:30 p.m.**  
**Behavior and Benefits of High-Fe<sub>3</sub>C DRI in the EAF**

F. Memoli, Tenova Core

**4 p.m.**  
**Process Model for Phosphorus Reaction in EAF Steelmaking: DRI, Scrap and Mix Cases**

M. Tayeb, Carnegie Mellon University/SABIC; R. Fruehan, Carnegie Mellon University; S. Sridhar, University of Warwick; P. Pistorius, Carnegie Mellon University

**4:30 p.m.**  
**A Practical Approach for Tracking Electrodes and Measuring Consumption**

R. Reddi, T. Gurley, R. Irwin, D. Henley, Steel Dynamics Inc.

**2 p.m. — Oxygen Steelmaking — BOF Operation & Modeling**  
**Room 19**

Session Chairs: Neal Pyke, ArcelorMittal Dofasco Inc.; Chuck Tomazin, United States Steel Corporation; Joachim Lehner, voestalpine Stahl Linz GmbH

**2 p.m.**  
**Impact of Different Heat Capacity Functions on Thermodynamic and Kinetic Modeling of the Basic Oxygen Furnace**

P. Bundschuh, J. Schenk, Montanuniversität Leoben; M. Hiebler, Siemens VAI Metals Technologies GmbH; H. Panhofer, A. Sormann, G. Klösch, voestalpine Stahl Donawitz GmbH

**2:30 p.m.**  
**Cavity Profile Induced by the Jets Impinging Onto Liquids Surface in BOF Steelmaking**

Q. Li, M. Li, Northeastern University; M. Feng, Liaoning Institute of Science and Technology; Z. Zou, Northeastern University

**3 p.m.**  
**Numerical Study of a Basic Oxygen Process**

G. Tang, B. Wu, Purdue University Calumet; J. Lash, United States Steel Corporation; L. Borges, U. S. Steel — Gary Works; C. Zhou, Purdue University Calumet

**3:30 p.m.**  
**Hot Metal Process Improvements With Rapid Measurement Techniques at ArcelorMittal Indiana Harbor No. 2 Steel Producing Plant**

G. Kaste, Heraeus Electro-Nite Co. LLC; R. Bathla, ArcelorMittal Indiana Harbor

**4 p.m.**  
**Acceleration of Quicklime Dissolution Into Slag by Internally Formed Gas**

N. Maruoka, H. Nogami, Tohoku University

**4:30 p.m.**  
**Continuous Developments at the Steel Plant 1 Usiminas Ipatinga Through Slagless® Technology**

B. Totti Maia, B. Orlando de Almeida Santos, F. Silveira Garajau, Lumar Metals Ltda; M. de Souza Lima Guerra; C. Alberto de Souza, A. Roberto Ribeiro, USIMINAS

**2 p.m. — Specialty Alloy & Foundry — Specialty Alloy — Part II**  
**Room 12**

Session Chairs: Tom Kantor, Latrobe Specialty Metals Inc.; Mark Suer, Special Metals Corp.; Danielle Baird, TimkenSteel Corp.

**2 p.m.**  
**Effect of MgO–Al<sub>2</sub>O<sub>3</sub>–SiO<sub>2</sub> Complex Inclusion on the Solidification Structure of 430 Stainless Steel**

Z. Chen, Y. Xu, Baoshan Iron and Steel Co. Ltd.

**2:30 p.m.**  
**Microstructure and Dynamic Mechanical Properties of Fe-0.08C-18Mn-2.6Si-3.4Al-0.03Nb Alloy**

Z. Tang, M. Ma, N. Zan, Z. Wu, Northeastern University; R. Misra, University of Texas at El Paso

**3 p.m.**  
**Effect of Mg–Al–Fe Alloy Deoxidation on Inclusions in Hot Work Die Steel H13**

G. Du, J. Li, Z. Wang, C. Shi, University of Science & Technology Beijing

**3:30 p.m.**  
**Study on Decarburization and Denitrogenation in VOD Process for Ultra-Purity Ferritic Stainless Steel**

Z. Chen, Y. Xu, Baoshan Iron and Steel Co. Ltd.





Tuesday, 5 May • Afternoon

4 p.m.

Static Softening Behavior of a Super Duplex Stainless Steel During Double-Pass Compression Tests  
*M. Ma, H. Ding, Z. Tang, Z. Jiang, Northeastern University; G. Fan, Shanxi Taigang Stainless Steel Co. Ltd.*

4:30 p.m.

Research on Precipitation Behavior of Primary Carbides in 8Cr13MoV Martensitic Stainless Steel During Electroslag Remelting  
*W. Yu, J. Li, C. Shi, Q. Zhu, University of Science & Technology Beijing*

**2 p.m. — Ladle & Secondary Refining — Vacuum Treatment Technology & Process Control**

**Room 11**

Session Chairs: *Dean Lovewell, Ellwood Quality Steels; Kevin Cotchen, SMS Siemag LLC; Matt Hallam, Steel Dynamics Inc. — Structural & Rail Div.*

2 p.m.

Hydrogen Removal Efficiency  
*A. Partyka, R. Gottardi, L. Gemo, S. Miani, INTECO special melting technologies*

2:30 p.m.

Innovative Vacuum Tank Degassing Technologies: High Level of Metallurgical Performance Figures Achieved by Using Dry Mechanical Pumps  
*F. Gandin, H. Koblenzer, Danieli & C. Officine Meccaniche SpA*

3:30 p.m.

Assets and Drawbacks of the Metallurgical Processing of Stainless Steels Regarding the Argon and Vacuum Decarburization Process  
*R. Pierer, INTECO special melting technologies; U. Jendrysek, GRIPS Software GmbH*

4 p.m.

Safe Operation of Mechanical Vacuum Pumps in Secondary Metallurgy Processes With Oxygen Blow  
*A. Teeuwssen, J. Chantry, G. Deng, Edwards GmbH*

**The Art and Beauty of Damascus Steel**

Damascus steel (or “damask”) is associated with artistically forged Turkish sabers of the 18th century. While it has become an accepted generic term, it still conjures up a feeling of mystery. *Damascus Steel* attempts to retell the complicated and multi-faceted history of the forging technology that created the flame-like motifs with gold and silver figures inlaid. Author Manfred Sachse’s years of forging activity and deep knowledge of Damascus steel are evidenced through diagrams and photographs that illustrate the beauty of the finished products, as well as illuminating the complex process.

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**Tuesday, 5 May • Afternoon****4:30 p.m.**

RH Field Experience With Mechanical Vacuum Pump System

*A. Teeuwesen, Edwards GmbH; Z. Dong, Chongqing Steel; G. Deng, Edwards GmbH***2 p.m. — Continuous Casting — Mold Powder & Mold Level Control**  
**Room 22***Session Chairs: Eric Rosenow, Nalco, an Ecolab company; Steve Thomas, Nucor Steel Gallatin; Darrell Sturgill, Stollberg Inc.***2 p.m.**

Effects of Electromagnetic Brake on Steel Flow in the Mold of a Thin-Slab Caster — A Numerical Simulation

*L. Gao, G. Zhang, Kunming University of Science and Technology; Y. Yang, P. Wu, A. McLean, University of Toronto***3 p.m.**

Measuring the Thermal Properties of Mold Flux Films

*K. Assis, P. Pistorius, Carnegie Mellon University***3:30 p.m.**

Local Heat Transfer Through Mold Flux Film and Optimal Narrow Face Taper Adjustment

*A. Krasilnikov, F. Fanghanel, SMS; D. Lieftucht, SMS Siemag AG; M. Reifferscheid, SMS; J. Laughlin, SMS group***4 p.m.**

Achieving Tighter Control Over the Slidegate Proportional Valve

*L. Kalra, A. Dasgupta, ArcelorMittal Indiana Harbor; K. Zheng, ArcelorMittal USA Research Laboratories; W. Umlauf, ArcelorMittal Global R&D***4:30 p.m.**Mold Solidification Control at High Casting Speed Over 7.0 m/Minute in the CEM<sup>®</sup>, POSCO*S. Kim, J. Hwang, S. Lee, POSCO***2 p.m. — Hot Sheet Rolling/Rolls — Roll Manufacturing Technology**  
**Room 13***Session Chairs: Homero Ortiz, ArcelorMittal USA Research Laboratories; Jim Murphy, Quaker Chemical Corp.; Tom Potts, T.S.T.D. Inc.***2 p.m.**

Development of Rolling Mill Rolls for the Latest Stands of HSM With a Focus on Abrasive Wear

*J. Noguera, Villares Rolls; M. Matsumoto, C. Serantoni, M. Oliveira, Gerdau***2:30 p.m.**

ESW's Research and Development: A Combination of Trials and Simulation

*M. Brandner, T. Nylén, L. Elizondo, T. Tricki, A. Paar, Eisenwerk Sulzau-Werfen***3 p.m.**

Key Structure–Property Relationships for Conventional and Enhanced Indefinite Chill Work Rolls

*C. Hrizo, K. Redkin, K. Marsden, WHEMCO Inc.; W. Betts, Consultant Roll Metallurgy; B. Kapadia, Metallurgical Consultant***3:30 p.m.**

Characteristics of Fujico Co. Ltd. CPC/HSS Rolls for Hot Strip Mills and Long Bar Mills and Its Application Results

*G. Lee, MBI Rolls LLC; M. Sasaki, Fujico Co. Ltd.***4:30 p.m.**

Investigation on Work Roll Corrosion and Oxidation Mechanisms in a Hot Strip Mill

*S. Flament, G. Walmag, CRM Group; M. Sinnaeve, Marichal Ketin***2 p.m. — Cold Sheet Rolling/Electrical Applications Sensors Systems — Shape & Surface**  
**Room 14***Session Chairs: Dave Woodward, Nidec Avtron Automation; Brian Smith, Primetals Technologies U.S.A. Holdings Inc.; Eric Huelson, Zolo Technologies Inc.***2 p.m.**

The Self-Curability and Explicit and Implicit Heritability of Shape Defects in Cold Rolling

*Y. Liu, Quad Engineering Inc.***2:30 p.m.**

Impact of Yield Strength and Work Hardening on Efficiency of Shape Setup in the Tandem Cold Mill

*E. Nikitenko, United States Steel Corporation***3 p.m.**

Resolving Complex Shape Distortions on Narrow, Thin-Gauge Strip Having an Asymmetric Transverse Thickness Profile

*M. Zipf, Cold Rolling Technologies Inc.***3:30 p.m.**

Surface Microstructure of Normal and Defected Cold Rolled Sheet, Investigated by SEM/EDS and Surface Profilometry

*R. Smits, B. Smeulders, Quaker Chemical Corp.***4 p.m.**

Application of Automatic Surface Inspection System in Automotive Sheet Production

*J. He, Baoshan Iron and Steel Co. Ltd.***4:30 p.m.**

Integrating Width Measurement in Thickness Gauges With Range-Independent Precision, Using Laser Profile Sensors

*A. Sonntag, Micro-Epsilon Messtechnik GmbH & Co. KG*



Tuesday, 5 May • Afternoon

## 2 p.m. — Plate Rolling — Plate Mill Technologies

### Room 15

Session Chairs: *Charlie Bender, NTN Bearing Corp. of America; Eric Thokar, Primetals Technologies U.S.A. Holdings Inc.; Tom Bovalina, Tenova Core; Larry Charbonneau, Vishay Precision Group Canada ULC (KELK)*

#### 2 p.m.

### Collaborative Creativity Spurs State-of-the-Art Descaling System

*D. Sawhill, CHL Systems; C. Lewis, ArcelorMittal Americas; A. Bala, ArcelorMittal*

#### 2:30 p.m.

### GearLink — A Quantum Leap in Drive Line Technology for the Next-Generation Heavy Plate Rolling Mills

*J. Mackel, Voith Turbo GmbH & Co. KG; H. Krenn, Buma Engineering & Anlagenbau GmbH; P. Grawenhof, Voith Turbo GmbH & Co. KG*

#### 3 p.m.

### Life Prediction of a Roughing Mill Stand at a Steel Plant

*Y. Sun, B. Wu, Purdue University Calumet; M. Nollar, J. Cox, ArcelorMittal USA; C. Zhou, Purdue University Calumet*

#### 3:30 p.m.

### Research of Advanced Accelerated Cooling System for Ultra-Heavy Steel Plate Heat Treatment

*T. Fu, Z. Wang, X. Deng, G. Wang, Northeastern University*

#### 4 p.m.

### Enhanced Product Quality and Product Range Based on Fully Automated Process Proven at Three Recent Plate Mill Modernizations

*W. Spies, SMS Siemag AG*

#### 4:30 p.m.

### Thin and Wide Plate Production Using SmartCrown Technology

*I. Robinson, A. Harvey, J. Stevens, Siemens VAI Metals Technologies Ltd.*

## 2 p.m. — Rod & Bar Rolling — Wire Rod Rolling

### Room 9

Session Chairs: *Jeff Richards, Charter Steel – Saukville, Wisconsin; Dick Delaney, Jersey Shore Steel Co.; Mario Fabro, SMS Meer Inc.*

#### 2 p.m.

### SILAT's New 600,000 Tpy Rod and Bar Mill in Brazil

*M. Arredondo, K. Fiorucci, Russula Corp.*

#### 2:30 p.m.

### The Most Advanced Systems for Perfect Coil Production: The Loop Laying Head Is a Top Cost-Winning Solution for the Latest Generation of H3 High-Speed Wire Rod Mills

*M. Dorigo, A. Taurino, M. Vasi, Danieli Morgårdshammar; A. Mestroni, Danieli Automation S.p.A.; A. De Luca, Danieli & C. Officine Meccaniche SpA*

#### 3 p.m.

### Pre-Finishing Mill Modernization on the Sterling Steel Rod Mill

*N. Gow, Primetals Technologies USA LLC; K. Reins, Sterling Steel Co. LLC*

#### 3:30 p.m.

### Modernization of the Badische Stahlwerke 2-Strand Wire Rod Mill for Increased Quality and Productivity

*B. Kiefer, N. Gow, Primetals Technologies USA LLC; L. Hentschel, Badische Stahlwerke GmbH*

#### 4 p.m.

### Straightening of Oil and Gas Tube: A Field to Be Explored

*D. Carletow, Heiko Machine Tools LLC; G. Pecorelli, D. Carnevale, Galdabini SPA*

## 2 p.m. — Pipe & Tube — Pipe & Tube Technology — Part II

### Room 16

Session Chairs: *Brian Frye, Nucor Steel Gallatin; Keith Tuma, United States Steel Corporation*

#### 2 p.m.

### Successful Implementation of Robotic Applications in the Tubular Industry

*M. Zecchi, E. La Bruna, Janus Automation*

#### 3 p.m.

### Utilization of Laser Gauging for Improving Process Control and Product Quality in Pipe and Tube Production Applications

*J. Dapore, NDC Technologies*

#### 3:30 p.m.

### Kocks KRM — An Innovative New Method for Cross-Roll Elongation of Seamless Tubes

*P. Connell, Kocks Pittsburgh Co.; J. Surmund, E. Bartel, Friedrich Kocks GmbH & Co.*

#### 4 p.m.

### Fluid Lubrication and Insert Wear in the Thread Cutting of High-Strength Pipe Materials

*B. Evans, E. Platt, Quaker Chemical Corp.; F. Hoogendoorn, Quaker Chemical B.V.; E. DeMeter, S. Shtub, The Pennsylvania State University*

**Tuesday, 5 May • Afternoon****2 p.m. — Metallurgy — Steelmaking & Casting — Casting Solidification Fundamentals****Room 20**

Session Chairs: P. Chris Pistorius, Carnegie Mellon University; Peter Glaws, The Timken Co.; Brian Thomas, University of Illinois at Urbana-Champaign

**2 p.m.****The Peritectic Phase Transition and Continuous Casting Practice**

S. Moon, R. Dippenaar, University of Wollongong; S. Kim, POSCO

**2:30 p.m.****The Implementation of a Carbon-Equivalent Formula to Define Mold Powder and Caster Process Rules**

C. van Kralingen, R. van den Bogert, S. Carless, E. Dekker, Tata Steel IJmuiden

**3 p.m.****Billet Defects: Pinhole and Blowhole Formation, Prevention and Evolution**

J. Madias, Metallon; M. Moreno, Technoconsultancy

**3:30 p.m.****Mechanism and Control of Hydrogen-Induced Stickers in Continuous Casting of Steel Slabs**

P. Sahoo, P. Palai, Tata Steel Ltd.

**4 p.m.****Study on Assessment of Solidification Structure and Solidification Process in High-Carbon Steel Billet Continuous Casting**

C. Du, Y. Yuan, J. Zhang, X. Zhang, P. Li, Y. Min, University of Science & Technology Beijing

**4:30 p.m.****Influence of Superheat on Centerline Porosity in the Continuous Casting of Microalloyed Steel Bloom**

A. Puranik, V. Marje, Bharat Forge Ltd.; G. Balachandran, Indian Institute of Technology – Madras

**2 p.m. — Metallurgy — Processing, Products & Applications — Process Quality & Technology****Room 10**

Session Chair: Amy Woods, Steel Dynamics Inc. – Flat Roll Div. – Butler

**2 p.m.****The New Paradigm of Surface Inspection Performance**

G. Gutmann, ISRA Vision Parsytec; S. Burkhardt, ISRA Parsytec

**2:30 p.m.****Up-to-Date Software Decision Support Tools Integrate Quality Data From All Relevant Gauges for Holistic Decisions**

G. Gutmann, ISRA Vision Parsytec; M. Hoenen, ISRA Parsytec

**3 p.m.****World's First Application of New idRHa+® Rail Hardening Technology in Baogang Rail Mill**

A. Lainati, Siemens; F. Pegorin, Registro Italiano Navale (RINA); A. Mazzarano, Centro Sviluppo Materiali S.p.A.

**3:30 p.m.****Mobile Application of 3D Thermodynamic Alloys Phase Diagram**

H. Shen, H. Abramowitz, Purdue University Calumet

**4 p.m.****Determination of Thermal Contact Conductance Based on Unsteady Temperature Measurement**

J. Horsky, J. Kvapil, Brno University of Technology; R. Moravec, K. Blazek, ArcelorMittal Global R&D – East Chicago

**4:30 p.m.****Evaluation of Surface Defects in High-Strength Hot Rolled Strips – A Case Study**

S. Kumar, V. Hernandez, HATCH Ltd.

**2 p.m. — Energy & Utilities — Energy Efficiency Savings****Room 4**

Session Chairs: Lou York, Case Engineering Inc.; Mark Kampe, CEC Combustion Safety

**2:30 p.m.****Intelligent Energy-Saving Technology for Steel Industry**

H. Imanari, M. Kihara, K. Kitagoh, K. Kubota, Toshiba Mitsubishi-Electric Industrial Systems Corp. (TMEIC)

**3 p.m.****Next-Generation Advanced Level 1 Reheat Furnace Control Using ZoloSCAN Laser Technology**

D. Giltner, K. Grieshaber, Zolo Technologies

**4 p.m.****Novel SVC Yard Configuration to Increase Availability, Productivity and Efficiency in Steel Plant**

K. Futter, S. Tambe, A. Kumar, H. Lor, ABB Inc.

**4:30 p.m.****Oxygen Vacuum Pressure Swing Adsorption Systems Enhance Steelmaking**

T. Geisler-Kahlert, Linde AG

# It pays to network...



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**Tuesday, 5 May • Afternoon****2 p.m. — Computer Applications —  
Automation & Control Modeling  
II Automation & Control  
Room 7**

*Session Chairs: Paul Hanyzewski, ArcelorMittal Burns Harbor;  
Charles Cinkowski, U. S. Steel – Great Lakes Works*

**2 p.m.**

**Enterprise Central Control System — A Case Study  
of Remote Monitoring, Diagnostics and Information  
Exchange for Steel Operations**

*D. Hreha, Schneider Electric*

**2:30 p.m.**

**Modernization of ArcelorMittal Cleveland Works HSM**

*J. Mason, Integrated Mill Systems*

**3 p.m.**

**Automatic EAF: Technological Improvements for a More  
Accurate Operability and Process Control**

*M. Piazza, M. Ometto, Danieli Automation S.p.A.*

**3:30 p.m.**

**Automation Upgrade of Outokumpu Avesta Steckel Mill  
Accomplished Within Regular Production Stops**

*W. Spies, D. Ehlert, SMS Siemag AG*

**4 p.m.**

**ArcelorMittal Indiana Harbor 84-Inch Hot Strip Mill Level  
2 Replacement Project**

*C. Forjan, ArcelorMittal Indiana Harbor*

**4:30 p.m.**

**Profit Optimization in Steel Industry: Profit Hawk  
Application**

*Y. Krotov, Steel Dynamics Inc. – Structural & Rail Div.;  
A. Bielat, M. Golovnykh, Profit Hawk*

**2 p.m. — Project & Construction  
Management — Panel: Planning  
Major Maintenance Outages  
Room 3**

*Session Chairs: David Marshall, Performance Improvement  
Inc.; Don Salsbury, R.E. Warner & Associates Inc.*

**2 p.m.**

**Panel Discussion**

*Panelists:*

*T. Charters, U. S. Steel Canada – Hamilton Works*

*J. Seaman, ArcelorMittal Indiana Harbor*

*S. Bohm, JNE Consulting Ltd.*

*T. Vrehas, Graycor Industrial Constructors Inc.*

**2 p.m. — Maintenance & Reliability/  
Lubrication & Hydraulics —  
Practical Solutions for Everyday  
Problems to Improve Equipment  
Reliability  
Room 6**

*Session Chairs: Walt Kusnier, Messinger Bearings – a  
Kingsbury Brand; Jeff Johnson, Nucor Steel–South Carolina;  
Sig Johansen, Nucor Steel–Texas*

**2 p.m.**

**Rolling Mill Bearing Failures: Causes and Corrections**

*R. Glutting, J. Oliver, SKF USA Inc.*

**2:30 p.m.**

**Using Mechanical Actuators in Place of Hydraulic  
Cylinders in Metals Applications**

*K. Foster, J. Della Villa, SKF USA Inc.*

**3 p.m.**

**Chock Deflection and Bearing Life**

*P. Brda, NSK Corp.*

**3:30 p.m.**

**Improved Sealing Solutions for Rolling Mill and a Caster  
Application**

*T. Suchy, B. Corgill, SKF USA Inc.*

**4 p.m.**

**Energy Optimization of High-Energy Pumps**

*R. Jennings, K. Babusiak, Hydro Inc.*

**4:30 p.m.**

**Fan Reliability Improvement**

*W. Doerner, W. Dudik, SKF USA Inc.*

**2 p.m. — Material Handling/Transportation  
& Logistics — Material Handling,  
Transportation & Logistics  
Room 1**

*Session Chairs: Doug Nicksch, Mi-Jack Products Inc.;  
Everette Davis, Nucor Steel–Berkeley; Larry Guinn, Nucor  
Steel–Berkeley*

**2:30 p.m.**

**Bulk Loading of Railroad Cars to Improve Productivity  
and Safety**

*D. Haslar, TimkenSteel Corp.; D. Nicksch, Mi-Jack Products*

**3 p.m.**

**Scrap Inventory Management**

*A. Nath, Nucor Steel Gallatin*

**3:30 p.m.**

**Benefits of the Implementing a State-of-the-Art Slab  
Tracking System**

*M. Zecchi, E. La Bruna, Janus Automation*



Wednesday, 6 May • Afternoon

## Wednesday, 6 May 2015 Afternoon Sessions

### 2 p.m. — Safety & Health — Safety Innovations Room 23

Session Chairs: Robbie Woods, California Steel Industries Inc.; Malcom Dunbar, Edw. C. Levy Co.; Joanne Zaraliakos, U. S. Steel Canada – Hamilton Works

**2 p.m.**  
Radio-Based Distance and Positioning Systems Applied to Tracking and Safety Applications

M. Zecchi, E. La Bruna, Janus Automation; D. Brunnengraber, Symeo GmbH

**2:30 p.m.**  
Fire-Resistant Greases in Steel Mills

J. Garrett, Summit Lubricants – Quaker Chemical Subsidiary

**3 p.m.**  
Accountability 4-3-3: The Critical Steps, Pivotal Moments and Types of Performers That Drive Organizational Excellence

D. Crouch, Caterpillar Inc.

**3:30 p.m.**  
Safety in the Workshop: How Do We Know If Our Steel Plant Is Safe Enough?

L. Arenas, Asesoria Industrial Especializada

### 2 p.m. — Environmental — Management of Wastes Room 5

Session Chair: Gary Amendola, Amendola Engineering Inc.

**2 p.m.**  
Reaction Behavior During Heating of Tokadeh Magnetite Ore With Carbonaceous Material Generated From Waste “Pure Water Sachets”

J. Dankwah, University of Mines and Technology;  
J. Dankwah, Kwame Nkrumah University of Science and Technology; D. Asamoah, G. Agyei, University of Mines and Technology; P. Koshy, University of New South Wales

**2:30 p.m.**  
Utilization of Waste Automotive Engine Oil and Its Blends With Biomass as Reductants in Ironmaking

J. Dankwah, University of Mines and Technology;  
J. Dankwah, Kwame Nkrumah University of Science and Technology; K. Boateng, University of Mines and Technology; P. Koshy, University of New South Wales

**3 p.m.**  
Recovery of Gallium From Secondary Vanadium-Depleted Ferrous Slag by Alkali Fusion  
L. Gao, University of Toronto; G. Zhang, Kunming University of Science and Technology; Y. Yang, University of Toronto; Z. Shi, Kunming University of Science and Technology; A. McLean, University of Toronto

**3:30 p.m.**  
Full Recovery of Steelmaking Waste Streams in a Dedicated Plasma Reactor  
E. Malfa, Centro Sviluppo Materiali & TenarisDalmine; L. Di Sante, A. DiDonato, Centro Sviluppo Materiali S.p.A.; F. Praolin, S. Tosato, P. Traini, TenarisDalmine S.p.A.

**4 p.m.**  
Selective Hydrometallurgical Extraction of Zn/Pb From Blast Furnace Sludge  
L. Piezanowski, S. Raynal, J. Hugentobler, M. Houbart, Paul Wurth S.A.

**4:30 p.m.**  
Contamination Control — Case Studies in the Primary Metals Market  
M. Mahapatro, Pall Corp.

### 2 p.m. — Cokemaking/ICSTI — Prolongation of the Life of a Coke Oven Battery — How to Protect the Asset Room 21

Session Chairs: Tim Wojtowicz, Dorchester Energy Holding, Inc.; Rob Carlin, DTE Energy Services; Matt Kraeuter, ThyssenKrupp Industrial Solutions AG

**2 p.m.**  
The Latest Developments on the EnviBAT Oven Pressure Regulation System  
J. Kühn-Gajdzik, F. Huhn, F. Krebber, K. Überschär, ThyssenKrupp Industrial Solutions AG

**2:30 p.m.**  
Coking Pressure — Fundamentals and Measurement Methodology in the Aspect of Safe Coke Oven Battery Operation  
A. Sobolewski, M. Sciazko, B. Mertas, Institute for Chemical Processing of Coal

**3 p.m.**  
Development and Production of High-Density Silica for Coke Ovens  
S. Dvorak, K. Lang, L. Vasica, P-D Refractories CZ

**3:30 p.m.**  
Coke Oven Life Prolongation — A Multi-Disciplinary Approach  
J. Madias, Metallon; A. Moreno, Technoconsultancy

**Wednesday, 6 May • Afternoon****4 p.m.****Predictive Model for Blending Coking Coals Part 2: USA Coals***R. Leeder, Canadian Carbonization Research Association; L. Giroux, CanmetENERGY-Ottawa; T. Todoschuk, ArcelorMittal Dofasco Inc.; C. Howey, Teck Coal***4:30 p.m.****Industrial Study on Coal Handling Bulk Density Control***T. Todoschuk, ArcelorMittal Dofasco Inc.; K. Ng, CanmetENERGY-Ottawa***2 p.m. — Ironmaking/ICSTI — Ironmaking Modeling II — Process Studies  
Room 25A***Session Chairs: Michael Pomeroy, ArcelorMittal Dofasco Inc.; Jose D'Abreu, Pontifical Catholic University of Rio de Janeiro; Joseph Poveromo, RMI Global Consulting***2 p.m.****Mathematical Models Development and Practical Tasks Solution of Ferrous Metallurgy***A. Dmitriev, Ural Federal University; Y. Gordon, HATCH Ltd.; Y. Chesnokov, G. Vitkina, Ural Federal University***2:30 p.m.****Use of Artificial Neural Network in Determination of Bed Permeability During Drying Stage of Iron Ore Pellets***M. Chagas, M. Machado, J. de Souza, Instituto Federal do Espírito Santo***3 p.m.****Fundamental Analysis of Passing Behavior of Powder Particle Through Packed Bed by DEM***H. Nogami, Tohoku University; M. Fukuda, T. Honda, J. Suzuki, Muroran Institute of Technology***3:30 p.m.****The Effect of Burden Distribution Mode on the Gas Distribution Inside COREX Shaft Furnace by Numerical Simulation***M. Kou, S. Wu, W. Shen, K. Du, Z. Zhang, F. Chang, University of Science & Technology Beijing; J. Zhu, Baoshan Iron and Steel Co. Ltd.***4 p.m.****DEM Simulation of Particle Size Segregation of Binary Particle Mixtures in a Quasi-2D Model***Z. Hu, D. Wang, F. Guo, C. Chen, J. Xu, Chongqing University***4:30 p.m.****CFD Analysis of Lining Erosion Phenomenon at the Outlet of Top Combustion Hot Blast Stove***D. Wu, P. Zhou, Z. Sun, C. Zhou, Central South University***2 p.m. — Ironmaking/ICSTI — Blast Furnace Equipment & Maintenance II — Burden Distribution  
Room 25B***Session Chairs: Jianlinag Zha, Beijing Iron and Steel; Albert Dzermejko, Magneco/Metrel Inc.; David Walnoha, Vesuvius USA***2 p.m.****Improvement of a Bell-Less-Type Charging System for Lower Coke Ratio (CR) Operation at the Blast Furnace***T. Otomo, JFE Steel Corp.***2:30 p.m.****Assessment of Top Charging Hoppers Design Through Reduced-Scale Models***T. Campos, J. Iezzi, J. Eymond, E. Begrem, A. Bidoli, ArcelorMittal Global R&D***3 p.m.****Effect of Conveyor Angle on Particle Size Segregation in Parallel-Hopper Bell-Less Top by Discrete Element Method***C. Li, S. Cheng, G. Zhao, Y. Li, University of Science & Technology Beijing***3:30 p.m.****New Innovations in Blast Furnace Charging***P. Whitfield, Siemens VAI Metals Technologies; J. Saxiner, Woodings Industrial Corp.***4 p.m.****On-Line Laser Detector for BF Burden Surface Profile Measurement***Z. Gao, J. Dai, J. Zhang, University of Science & Technology Beijing; J. Luan, Jinan Iron and Steel Group Co. Ltd.; J. Lu, Handan Iron and Steel Co. Ltd.; T. Gao, X. Yang, Shenwang Pioneer Tech. Corp. Beijing***4:30 p.m.****Modern Equipment Facilitating Ironmaking at Reduced Cost***D. Berdusco, L. Hausemer, P. Bernes, F. Hansen, P. Tockert, S. Köhler, Paul Wurth S.A.***2 p.m. — Ironmaking/ICSTI — Alternate Ironmaking & Resource Recovery  
Room 25C***Session Chairs: Marka Okrutny, HATCH Ltd.; Yakov Gordon, HATCH Ltd.; Thomas Daum, TMEIC Corp.***2 p.m.****Features of FASTMET®***Y. Miyakawa, Kobe Steel Ltd.*





Wednesday, 6 May • Afternoon

3 p.m.

Application of HISMELT Smelting Reduction Process in China

X. Meng, L. Li, F. Zhang, C. Cao, Beijing Shougang International Engineering Technology Co. Ltd.

3:30 p.m.

Perhaps “Indirect Reduced Iron” Is the Answer: Will Combining Alternative Processes Make a Better Whole?

L. Southwick, L.M. Southwick & Assoc.

4 p.m.

Electrowinning of Iron From Waste Solutions

T. Eisele, Michigan Technological University

4:30 p.m.

A New Process of Oxidation Roasting-Gas-Based Direct Reduction/Electric Furnace Smelting Separation for High-Chromium Vanadium-Titanium Magnetite

M. Chu, J. Tang, Z. Liu, C. Feng, Northeastern University

## 2 p.m. — Ironmaking/ICSTI — Ironmaking Raw Materials IV — Composite Pellets

Room 26A

Session Chairs: Jose Noldin, Lhoist Group; Koji Saito, NSSMC; Paulo Nogueira, Vale Inco

2 p.m.

Effect of Heating Condition on Carbothermic Reduction Behavior of Coal-Containing Composite Pellets Packed in Tall Bed

T. Huang, S. Liu, G. Shiao, China Steel Corp.

2:30 p.m.

Effect of Charcoal Particle Size on the Reduction Rate of Iron Ore-Carbon Composite

E. Mousa, RWTH Aachen University

3 p.m.

Melting Acceleration of Iron Ore Composite Using Two Kinds of Carbonaceous Materials

T. Murakami, K. Owaki, E. Kasai, Tohoku University

3:30 p.m.

Effects of Coke Mixed Charging Ratio on Softening-Dripping Performance of Vanadium-Titanium Composite Burdens Smelted in Blast Furnace

M. Chu, Z. Liu, J. Tang, S. Wang, Northeastern University

4 p.m.

Comprehensive Utilization of Boron-Bearing Iron Concentrate Based on Carbon Composite Pellet Iron Nugget Technology

G. Wang, J. Wang, X. She, G. Xue, University of Science & Technology Beijing

4:30 p.m.

Research on After-Reduction Compressive Strength of Preheated Carbon-Bearing Pellets With Different Coal Size

J. Yang, C. Xie, J. Li, Q. Meng, C. Liang, Anhui University of Technology

## 2 p.m. — Ironmaking/ICSTI — Blast Furnace Operating Improvements

Room 26B

Session Chairs: Frederick Hyle, CIM-Tech Inc.; Maarten Geerdes, Geerdes Advies; Xuegong Bi, Wuhan University of Science and Technology

2 p.m.

Perspective and Challenges of Ironmaking in China

Y. Sha, J. Cao, China Iron & Steel Research Institute

2:30 p.m.

A Numerical Study of Oxygen Blast Furnace Operation

M. Helle, H. Saxon, Abo Akademi University

3 p.m.

The Pilot Expert System to Control Blast Furnace Operation

Y. Gordon, HATCH Ltd.; N. Spirin, V. Lavrov, L. Gileva, Ural Federal University

3:30 p.m.

New Taphole Drilling Hammer Technology

C. Bodeving, R. Clesen, F. Helsper, TMT Tapping and Measuring Technology; S. Kaindlbauer, BBG Baugeräte GmbH; J. Pithan, TMT Tapping and Measuring Technology

4 p.m.

Technological Progress and Prospect of 5,500-m<sup>3</sup> Blast Furnace in Shougang Group

W. Zhang, H. Chen, J. Wu, B. Ren Yi, Shougang Research Institute of Technology

4:30 p.m.

The Cause and Countermeasures of BF Blowpipe Burnout at Tangsteel of HBIS

J. Zhao, Y. Jin, Tangshan Iron and Steel Group Ltd.; Z. Gao, J. Zhang, University of Science & Technology Beijing; Y. Gao, X. Yang, Shenwang Pioneer Tech. Corp. Beijing

## 2 p.m. — Electric Steelmaking — EAF Equipment Updates

Room 24

Session Chairs: Christer Carlsson, Agellis Group AB; Peter Petrov, Siemens Industry Inc.; Rob Strain, Primatech Technologies USA LLC

**Wednesday, 6 May • Afternoon****2 p.m.****ArcSave, Innovative Solution for Higher Productivity and Lower Cost in the EAF***H. Hackl, ABB AB; A. Jones, N. Pinto, Steel Dynamics Inc.; L. Teng, ABB AB***2:30 p.m.****Latest Developments on Gas Purging Systems in EAF***M. Kirschen, RHI AG; R. Ehrengruber, Stopinc AG; A. Hanna, RHI Canada Inc.; K. Zettl, RHI AG***3 p.m.****Performance Experience of the MultiROB at BSW — How Safety, Productivity and Accuracy Go Hand in Hand***P. Hansert, BSE America; R. Stech, M. Quant, T. Kleiber, R. Kohn, Badische Stahl-Engineering GmbH***3:30 p.m.****Slag Door Pusher for Electric Arc Furnaces***M. Jobe, KT-Grant Inc.***4 p.m.****EAF Operational Test of the SIS Injector***H. Odenthal, S. Buess, P. Starke, R. Nörthemann, SMS Siemag AG; K. Alshurafa, SMS Siemag LLC***4:30 p.m.****Next-Generation EFSOP® Offgas Analysis Technology: A Hybrid Extractive-Optical Solution***V. Scipolo, D. Zulliani, A. Pal, O. Negru, Tenova Goodfellow Inc.***2 p.m. — Oxygen Steelmaking — BOF Chemistry & Quality****Room 19***Session Chairs: Jürgen Cappel, Cappel Stahl Consulting GmbH; Neslihan Dogan, McMaster University; Karim Alshurafa, Reco Equipment Inc.; Edward Liu, United States Steel Corporation***2 p.m.****Influence of the Slag Properties in the Steel Dephosphorization Efficiency***J. de Oliveira, F. Costa, Instituto Federal do Espírito Santo; S. Oliveira, São Paulo University; F. Cristo, H. Clem, Instituto Federal do Espírito Santo***2:30 p.m.****Phosphorus Equilibrium Between Liquid Iron and Slag: An Improved Correlation and Plant Data Analysis***A. Assis, M. Tayeb, Carnegie Mellon University; S. Sridhar, University of Warwick; R. Fruehan, Carnegie Mellon University***3 p.m.****Kinetics of Dephosphorization of Metal Droplets During Oxygen Steelmaking***K. Coley, K. Gu, B. Jamieson, X. Zhu, N. Dogan, McMaster University***3:30 p.m.****Endpoint Prediction Technology of BOF Based on Flame Information***Z. Liu, L. Tian, R. Wang, RAMON Science & Technology Co. Ltd.***4 p.m.****Improvement in BOF Steelmaking Using Sublance and Level 2***V. Gautam, R. Patil, A. Sarkar, A. Sarkar, S. Vishwanath, JSW Steel Ltd.***4:30 p.m.****Dissolution of Lime in Cr<sub>2</sub>O<sub>3</sub>-Containing Converter Slags***W. Yan, University of Toronto; W. Chen, University of Science & Technology Beijing; Y. Yang, A. McLean, University of Toronto***2 p.m. — Continuous Casting — Design for Quality Steel Production****Room 22***Session Chairs: Rich Besich, ArcelorMittal Indiana Harbor; Ron O'Malley, Missouri University of Science & Technology; David Tackett, Siemens Industry Inc.***2 p.m.****25 Years of Refractory Development for Thin-Slab Application***J. Rogler, Vesuvius USA; J. Richaud, Vesuvius France; G. Baehren, Vesuvius China***2:30 p.m.****New Extra-Large 350-mm-Thick x 2.6-m-Wide Slab Caster at Yingkou***S. Baf, G. Busolin, Danieli & C. Officine Meccaniche SpA***3 p.m.****Establishment of Minimum Mold Heat Removal and Control for Continuous Casting***X. Zhou, D. Brown, S. Abraham, R. Bodnar, SSAB Iowa Inc.***3:30 p.m.****Major Billet Caster Revamp to Produce SBQ Grades at Ovako***P. Ponikvar, Sarralle USA Inc.; A. Chiogna, Sarralle Equipos Siderúrgicos S.L.***4 p.m.****Implementation of Innovative Advanced Mold Tubes at Hadeed SPLP1***C. Pinheiro, SABIC/Hadeed; T. Katakam, Y. Al-Sehati, H. Al-Bugami, Hadeed-Saudi Iron and Steel Co.***4:30 p.m.****New Developments in Dynamic Soft Reduction in Continuous Casting of Blooms for Rail Steel***L. Cestari, A. Sgrò, M. Motta, Danieli & C. Officine Meccaniche SpA*



Wednesday, 6 May • Afternoon

**2 p.m. — Plate Rolling/Metallurgy  
— Processing, Products &  
Applications — Plate Heat  
Treating**  
**Room 15**

*Session Chairs: Blane Vines, Nucor Steel Tuscaloosa Inc.;  
Corey Ivey, Nucor Steel—Hertford County*

**2 p.m.**  
Plate Shape Prediction by Using Thermo-Mechanical and  
Metallurgical Model During Water Quenching  
*A. Fall, M. Hamide, A. Baur, C. Romberger, ArcelorMittal*

**2:30 p.m.**  
Influence of Reheat Conditions on Secondary  
Recrystallization and Precipitation Behavior in HSLA  
Steels  
*D. Ringinen, A. Chastukhin, G. Khadeev, Vyksa Steel Works;  
L. Efron, United Metallurgical Co. (OMK)*

**3 p.m.**  
Advanced Technologies for Heat Treatment of Steel Plate  
*J. Stubenbort, Tenova Core; H. Kehler, LOI Thermprocess  
GmbH*

**3:30 p.m.**  
Effect of the Low- and Mild-Carbon HSLA Steels on Hot  
Rolling Parameters Under Precipitation Temperatures  
*Q. Yu, J. Hebert, Nucor Steel*

**4 p.m.**  
Primetals Technologies Plate Normalizing Line at AHMSA  
*G. Safford, V. Sox, Primetals Technologies*

**4:30 p.m.**  
Leveling Heat Treat Plate  
*D. Withrow, T. Allor, Allor Manufacturing Inc.*

**2 p.m. — Metallurgy — Steelmaking &  
Casting — Clean Steel — Cast &  
Final Product**  
**Room 20**

*Session Chairs: Pallava Kaushik, ArcelorMittal Global R&D  
— East Chicago; Shahrooz Nafisi, EVRAZ Regina; Naveen  
Gupta, U. S. Steel Research and Technology Center*

**2 p.m.**  
Enhancing Grain Refinement of Austenitic Steel With Ti  
Additions by Melt Treatment Sequence Optimization  
*S. Lekakh, J. Ge, V. Richards, R. O'Malley, Missouri University  
of Science and Technology*

**2:30 p.m.**  
Effect of Steelmaking and Casting Practices on Product  
Inclusion Content  
*S. Story, Q. Liu, U. S. Steel Research and Technology Center*

**3 p.m.**  
The Deformation Behavior of Different Inclusions for  
Super-Clean Steel Wire During Drawing Process  
*H. Jang, W. Huang, C. Wu, G. Chang, C. Wang, China Steel  
Corp.*

**3:30 p.m.**  
Effects of Non-Metallic Inclusions and Their Shape  
Modification on the Properties of Pipeline Steel  
*X. Yin, University of Toronto; Y. Sun, University of Science &  
Technology Beijing; Y. Yang, A. McLean, University of Toronto*

**4 p.m.**  
Behavior of Carbonitride (Ti,Nb,V)(C,N) Precipitating on  
Oxide Inclusion in AISI H13 ESR Tool Steel Modified With  
Niobium  
*Y. Xie, G. Cheng, University of Science & Technology Beijing;  
L. Chen, Y. Zhang, Q. Yan, Xining Special Steel Co. Ltd.*

**4:30 p.m.**  
Experimental Research and Thermodynamic Calculation  
on the Precipitation Behavior of Second-Phase Particles  
in Ti-IF Steel  
*Y. Mei, J. Li, J. Ge, S. Cheng, Y. Li, University of Science &  
Technology Beijing*

**2 p.m. — Computer Applications —  
Modeling II**  
**Room 7**

*Session Chairs: Tony Kmita, ArcelorMittal Burns Harbor; Jim  
Cole, TimkenSteel Corp.*

**2 p.m.**  
CFD Analysis of Hot Metal Desulfurization Process for  
Improved Mixing in a Torpedo Vessel  
*X. Zhang, H. Dang, Purdue University Calumet;  
T. Bhattacharya, ArcelorMittal Global R&D; B. Wu, A. Silaen,  
C. Zhou, Purdue University Calumet*

**2:30 p.m.**  
Reduction of Sticker Formation During Batch Annealing  
Cooling  
*J. Pond, Analysis and Applications Associates Inc.;  
G. Goldsmith, U. S. Steel — Gary Works; G. Woods, Analysis  
and Applications Associates Inc.*

**3 p.m.**  
Thermal Profile and Energy Level Calculation for  
a Mannesmann Rolling Mandrel Using the Finite  
Differences Method  
*R. Venâncio da Silva, L. Soares, Vallourec Tubos do Brasil  
S.A.; R. Hübner, Universidade Federal de Minas Gerais*

**3:30 p.m.**  
Analyzing Oxygen Steelmaking Kinetics Using IMPHOS  
Pilot Plant Data  
*A. Hewage, G. Brooks, J. Naser, Swinburne University of  
Technology*

**Wednesday, 6 May • Afternoon**

**4 p.m.**  
Simulation and Modeling of an Air Separation Unit in China Steel Corp.  
*M. Lee, T. Chen, H. Kao, Y. Li, China Steel Corp.*

**4:30 p.m.**  
FEM Simulation and Industrial Validation of Void Closure in a Large Cross-Section Hot Rolled Low-Alloy Steel  
*R. Nalawade, P. Patil, Bharat Forge Ltd.; G. Balachandran, Indian Institute of Technology – Madras*

**2 p.m. — Maintenance & Reliability  
— Maintenance & Reliability  
Technology  
Room 6**

*Session Chairs: Denny Smith, Brilex Industries Inc.; Bob Miller, IVC Technologies; Bill Bennett, Steel Dynamics Inc. – Structural & Rail Div.*

**2 p.m.**  
Online Data Collection  
*L. Frey, J. Baechle, ArcelorMittal Burns Harbor*

**2:30 p.m.**  
Preventive Maintenance Reconsidered  
*L. Arenas, Asesoría Industrial Especializada*

**3 p.m.**  
Mobile Technologies for Plant Maintenance and Compliance Applications  
*D. Hreha, Schneider Electric*

**3:30 p.m.**  
Predictive Advanced Condition Diagnostics of Processing Equipment and Process With Acoustic Emission Technology – Practical Applications and Cases  
*K. Aura, Andritz Oy; H. Haase, Andritz AG; B. Bahr, ANDRITZ METALS Inc.*

**4 p.m.**  
Maintenance of Your Electrical System for Maximum Reliability  
*A. Holt, Premier Power Maintenance*

**4:30 p.m.**  
Maintenance Basics in Conjunction With Integrated Condition Monitoring Is the Simplest Way of Enhancing Machine Reliability and Availability  
*S. Bhansali, P. Agrawal, S. Ram, N. Tripathi, A. Gangopadhyay, Jindal Steel & Power Ltd.*






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- Better Control of Bath Metallurgy & Carbon
- Cleaner Melting & Quieter Operation
- Reduced Real-Estate/Space Required
- Better Metal Homogeneity
- Lower Cost of Refractory & Other Consumables
- Lower Power Levels with Minimum Voltage Notching & the Lowest Harmonic Generation
- Reduced Cost of Dust Collection & Disposal
- No Electrode Cost

To learn more about how we can help you, call 1.888.INDUCTO or visit [www.inductotherm.com](http://www.inductotherm.com).  
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 **INDUCTOTHERM**  
**GROUP**

Leading Manufacturers of Melting, Thermal Processing and  
Production Systems for the Metals and Materials Industry Worldwide.

Important: Appropriate Personal Protective Equipment (PPE) must be worn by anyone in proximity to molten metal.



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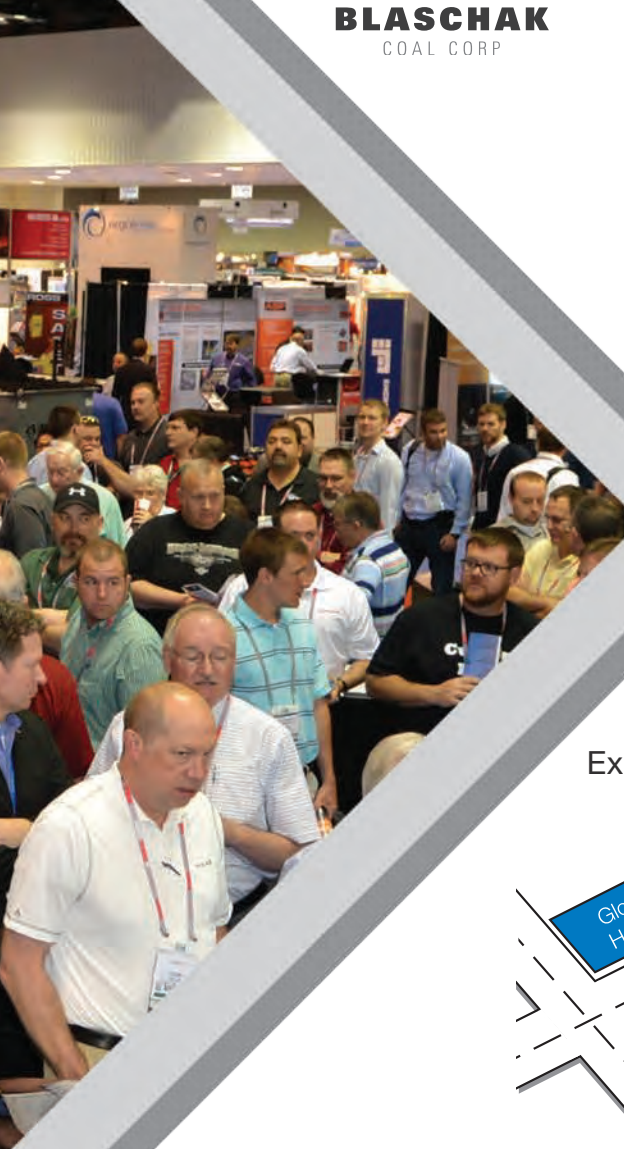
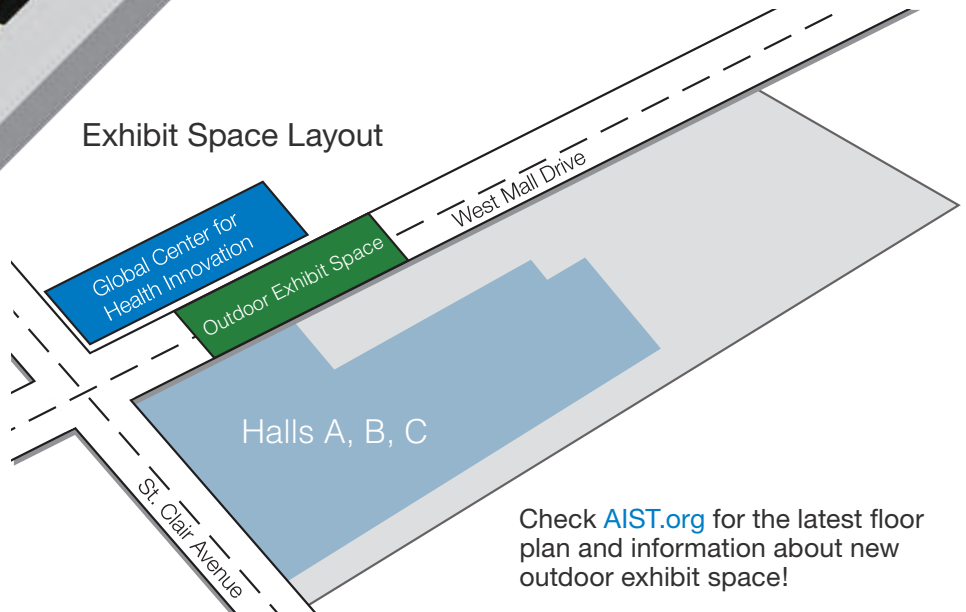


Exhibit Space Layout



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## Indoor Space

## Outdoor Space

West Mall Drive

31E	33E	35E	37E	39E	41E	43E	45E	47E
32E	34E	36E	38E	40E	42E	44E	46E	48E

51E	53E	55E	57E	59E	61E	63E	65E	67E
52E	54E	56E	58E	60E	62E	64E	66E	68E

# Preliminary List of Exhibitors

## A

Abanaki Corp.  
 ABB Inc. ♦  
 ABP Induction LLC  
 Accurate Technologies  
 Ace World Companies ♦  
 Acuity-vct Inc.  
 Advanced Application  
 Modernization  
 Aerodyne Environmental  
 Affival Inc.  
 Agellis  
 Aginzo Consulting Group  
 AIC Capitanio Automation ♦  
 AIM Machinery  
 Air Products  
 AirStream Systems Inc.  
 Ajax TOCCO Magnethermic  
 Albarrie Environmental Services  
 Allor Mfg. Inc./Plesh Industries  
 AMEPA America Inc.  
 American Chemical Technologies  
 Inc. ♦  
 American Roller Bearing Co. ♦  
 American Sensors Corp.  
 AmeriFab Inc.  
 AMETEK
 

- AMETEK Factory  
 Automation
- AMETEK LAND
- AMETEK Newage Testing  
 Instruments
- AMETEK Process  
 Instruments

 AMI GE  
 ANDRITZ Herr-Voss Stamco ♦

ANDRITZ METALS Inc.  
 Andronaco Industries  
 ANT Automation LLC  
 Applied Fluids LLC  
 ARkO By PMP  
 Armstrong Kover Kwick Inc.  
 ASB Industries Inc.  
 ASKO  
 Association of Women in the Metal  
 Industries (AWMI)  
 Atlantic Track – Crane Runway  
 Division  
 Atlas Machine & Supply Inc.  
 ATS SpA  
 Auburn Environmental Services  
 AustralTek LLC ♦

## B

Babcock & Wilcox MEGTEC  
 Baldor Electric Co.  
 Baltimore Aircoil Co.  
 Bar Hydraulics Inc.  
 BASF Corp.  
 BEDA Oxygentech USA  
 Beijing Yingnian International  
 Exhibition Co. Ltd.  
 Belt Conveyor Guarding  
 Belzona Inc.  
 Berry Metal Co. ♦  
 Berthold Technologies USA LLC  
 Beta LaserMike  
 Bijur Delimon International  
 Birmingham Rail & Locomotive  
 Bi-State Rubber Inc.

Blaschak Coal Corp. ♦  
 Bloom Engineering Co.  
 Blundstone Footwear  
 BMR Group  
 Boldrocchi srl  
 Boll Filter Corp.  
 Brady IT Solutions  
 BRAUN Machine Technologies ♦  
 Brilex Inc. – Taylor-Winfield  
 Technologies Inc.  
 Brokk  
 Brunel Corp.  
 BSE  
 Buckeye Pumps Inc.  
 Burndy LLC  
 Busch Vacuum Pumps and  
 Systems  
 Butech Bliss

## C

C & E Plastics Inc.  
 C.R. Cylindrical Roller Bearings  
 Cableform Inc.  
 Caldwell Group Inc., The  
 Can-Technologies Inc.  
 Carolina Strapping & Buckles Co.  
 CASTELLINI Officine Meccaniche  
 S.p.A.  
 Caster Maintenance Co.  
 CavCom Inc.  
 CCR Technologies Inc.  
 Cervis Inc.  
 Changzhou Kaida Heavy Industry  
 Technology Co. Ltd.  
 ChemTreat

Please note: Includes all exhibitors confirmed as of 5 February 2015. For the latest updates, visit [AISTech.org](http://AISTech.org).

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 CITGO Petroleum ♦  
 CLARCOR Industrial Air | BHA  
 Clean Water Technology Inc.  
 CMI Heavy Industries  
 CMI Industry (EFCO)  
 Cobra Wire & Cable, A Division of  
 EIS Inc.  
 Columbia Machine Works Inc.  
 Comesa Work Rolls  
 Conductix-Wampfler ♦  
 Continental Field Machining  
 Control Chief  
 Cooling Tower Depot Inc.  
 Corewire Ltd.

Corrosion Fluid Products Corp.  
 CORTS Bearing Technology &  
 Engineering  
 CVS Technologies

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 D&S Hoist and Crane  
 Dalton Industries  
 Danielli ♦  
 Datapaq  
 Delta Railroad Construction Inc.  
 Delta USA  
 DESHAZO LLC  
 Deublin Co.  
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 Dixon Valve & Coupling Co.  
 DLZ Industrial Surveying  
 Doerrenberg Edelstahl GmbH  
 Dover Hydraulics Inc.  
 Drafto Corp.  
 Drivecon  
 DropsA USA Inc.  
 Duff-Norton  
 Duraloy Technologies  
 Duranice Applied Materials (Dalian)  
 Co. Ltd.

## E

EAFab  
 Ebner Furnaces Inc.

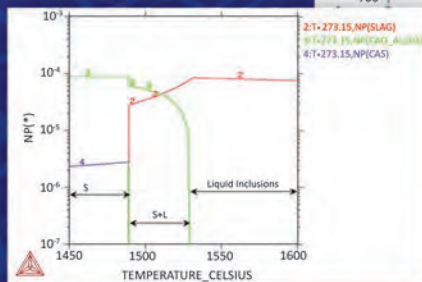
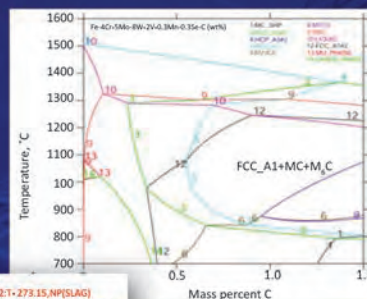
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- ✓ Casting
- ✓ Hot rolling
- ✓ Heat treatment
- ✓ Corrosion
- ✓ Scrap and recycling
- ✓ Refractory system
- ✓ and more...



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Please visit us at Booth 2704  
 AisTech 2015, Cleveland, OH, May 4-7, 2015

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USA, Canada and Mexico  
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 Phone: (724) 731 0074  
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Elettrotek Kabel North America Inc.  
eMeasurementics  
EMG USA Inc.  
EMPCO♦  
EMSCO Inc.  
Enertech Inc.  
Enrotech  
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ERIEZ  
ESM Group Inc.  
ETA Engineering Inc.  
ETS/Evertz Technology Service  
EVERLOY Shoji Co. Ltd.  
Exactration LLC  
EXO Technologies LLC

## F

Falk-PLI  
Fedmet, Diamond Graphite, TKE  
Ferrum International  
Filtertech  
Finzer Roller Inc.  
Fives

- Fives Bronx
- Fives Celes
- Fives DMS
- Fives Keods
- Fives North American Combustion Inc.
- Fives North American Construction Services Ltd.
- Fives OTO SpA
- Fives ST Corp.
- Fives ST Furnace Div.
- Fives Stein Inc.

Flame Tech  
FLANDERS  
Flexospan  
Flow In Motion  
FLSmith Inc. – AFT Division♦  
Freudenberg-NOK Sealing Technologies

FrigorTec LP  
FTI Flow Technology Inc.  
Fuchs Lubricants Co.

## G

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GAI-Tronics  
Galdabini SPA  
Gantrex Inc.  
Gexpro  
Gigasense AB  
Gleason Reel  
Global Gauge Corp.  
Globex Corp.  
Gorman-Rupp Pumps  
GP Strategies  
GPM – Eliminator Solid Pumping Solutions  
Gradall  
GrafTech♦  
Graphite Electrode Sales Inc.  
GS Hydro Inc.

## H

Habets BV – Surface Technology  
HARSCO  
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HASTEC Rebs Inc.  
Hatch  
Hauck Manufacturing Company  
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HBC-radiomatic Inc.  
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Hubbell Industrial Controls  
Hubbell Lighting  
Huebner  
Hunger Hydraulics CC Ltd.  
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Hyson Industrial  
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Incosa Solutions  
INDEV Gauging Systems  
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Industrial Pulley Puller  
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ITR  
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Linde LLC  
Lintern Corp.  
LISMAR Inc.  
Logika Technologies

Lokring Great Lakes  
Loveman Steel Corp.  
Ludeca Inc.  
Lumar Metals North America  
LumaSense Technologies

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J.C. Steele & Sons Inc.  
J.R. Merritt Controls  
J.T. Thorpe & Son Inc.  
James Walker Mfg.  
Janus Automation  
Jayne Industries Inc.  
Jordan Transformer  
JW Hicks Inc.

## K

Kalenborn Abresist Corp.  
Kalmar USA  
KAMAG Transporttechnik GmbH & Co. KG  
Kastalon Inc.  
Kenwood USA Corp.  
KettenWulf USA L.P.  
Key Bellevilles  
Killark  
Kocsis Brothers Machine Co.  
Konecranes Inc.  
Koyo Bearings  
Kress Corp.  
KT Grant Inc.  
Kubota Materials Canada

## L

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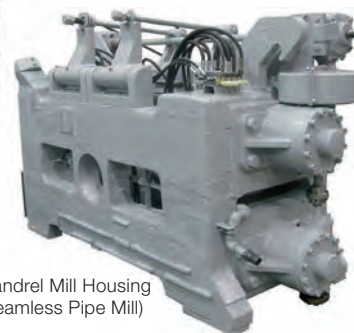
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▲ AGC Cylinder



▲ Work Roll Chocks



▶ Mandrel Mill Housing (Seamless Pipe Mill)

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Mazzella Companies  
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Metallurgical Solutions Inc.  
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Moduloc Control Systems  
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MORE s.r.l.

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MRSI  
MTUS Technology Inc.

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Nicro S.P.A.  
Nidec Industrial Solutions ♦  
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**P**

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QuinLogic

**R**

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RAD-CON Inc.



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Rapid Gear  
REA JET♦  
RECO Equipment Inc.  
Regal Power Transmission  
Solutions  
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RelaDyne  
Renold Torque Transmission  
REXA  
Rexnord Industrial Services  
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RotaDyne  
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System Seals Inc.  
Systems Spray-Cooled Inc.

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Tebulo NA Ltd.  
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Tenova  
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Tokai Carbon Group  
Transbotics Corp.  
Transformers and Rectifiers (India) Ltd.  
TransTech  
Tri-Chem  
Tribco Inc.  
T-T Electric USA  
Tube City IMS  
Tube-Mac Piping Technologies

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Unigen Steel Engineering srl  
Unilux  
Union Electric Steel Corp.  
United Rolls  
Universal Plant Services Inc.

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VELCO GmbH  
Veolia Water Technologies  
Vesuvius USA  
Vista Control Systems  
Voith Turbo Inc.  
Vollmer America Inc.  
VUHZ a.s.

**W**

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WHEMCO Inc.  
WHEMCO Ohio Foundry  
WHEMCO Steel Castings Inc.  
Whiting Corp.  
Whiting Equipment Canada  
Winkle Industries Inc.  
Franz Wölfer  
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Osnabruck GmbH  
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**X-Z**

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# Exhibiting Companies

## Abanaki Corp.

[www.abanaki.com](http://www.abanaki.com)

Abanaki Corp. is a world leader in oil skimming technologies. Abanaki's product line offers oil skimming technologies that are applicable to a multitude of industries, including steel, refineries, machining and more. Notable products used in these industries are the Model 8 belt oil skimmer, the Model 4 belt oil skimmer and the Grease Grabber, which are capable of retrieving oils and greases from water pits in harsh conditions. Abanaki operates under the corporate motto "Clean Our World<sup>®</sup>," addressing pollution in the industry through low total cost of ownership, constant innovation and environmental stewardship.

## ABB Inc.

[www.abb.com](http://www.abb.com)

ABB Inc. manufactures and supplies power systems and automation technologies such as arc furnace transformers, series reactors, ladle furnace transformers, and rectifier transformers for electrolysis processes and mill drives, as well as the vacuum reactance load tap changer. Other products include DC furnace power electronics and furnace regulation; flatness measurement and control; roll force, tension, thickness, and position measurement and weighing; SVC and SVC Light<sup>®</sup> power quality systems; electromagnetic stirring and caster brakes; hot mills and CoE cold rolling drives and automation. On-site installation and engineering services for power transformers, as well as transformer repair to original performance and remanufacturing to achieve enhanced performance.

## ABP Induction LLC

[www.abpinduction.com](http://www.abpinduction.com)

In 1903, our predecessors at ASEA built the first induction furnace for foundry operations. ABP Induction continues the traditions and visions of its founders ASEA, BBC and ABB, providing superior induction technology with proven experience in steel melting and heating processes. Increasing customer demand for reduced operating cost has encouraged us to develop highly efficient induction furnaces with melting capacities up to 80 t/hour per furnace, EAFs and ladle refining furnaces that can also act as a buffer between the melting unit and the continuous casting machine. Our heating business focuses on billet and bar heating, slab and strip heating, and pipe and rail heating applications. ABP Induction provides foundries the opportunity for economic growth while balancing social and economic concerns.

## Ace World Companies

[www.aceworldcompanies.com](http://www.aceworldcompanies.com)

For more than 25 years, Ace World Companies has designed and manufactured overhead cranes for the steel industry, serving both mills and service centers. We engineer material handling solutions for all hot metal applications, including ladle, charging, scrap and billet handling. We also specialize in rotating coil stackers, transfer cars and automated systems. Our overhead cranes and systems are maximizing steel production in facilities throughout the United States and abroad.

## Acuity-vct Inc.

[www.acuity-vct.com](http://www.acuity-vct.com)

Acuity-vct, formerly Benchmark Automation, demonstrates the video capture system, troubleshooting

manufacturing and quality problems in the steel industry, generating significant savings in primary to rolling and finishing operations. BSK Industries Inc. has extensive experience within the gauging industry from years of maintaining x-ray and isotope gauging systems.

## Advanced Application Modernization

[www.advancedcomputersoftware.com/365/business-innovation/application-integration-modernisation.php](http://www.advancedcomputersoftware.com/365/business-innovation/application-integration-modernisation.php)

Advanced Application Modernization is a leading provider of application and data modernization solutions that allow organizations in the steel industry to make the most of their existing investments in technology and human resources. Advanced works with companies to fully understand their current applications and data portfolios in order to provide a customized suite of modernization products and services to meet their specific business needs. Advanced has successfully helped many steel and other industry organizations around the world achieve their application modernization goals.

## Aerodyne Environmental

[www.dustcollectorhq.com](http://www.dustcollectorhq.com)

Aerodyne Environmental has been specializing in solving dry material handling problems for more than 60 years through such products as high-efficiency cyclone dust collectors and low-cost, low-maintenance, material-handling valves. Like its sister company, Abanaki Corp., Aerodyne operates under the corporate motto "Clean Our World<sup>®</sup>," addressing material handling challenges through innovation, customer commitment and environmental stewardship.

Contact [sales@aist.org](mailto:sales@aist.org) to make sure your company's advertisement appears within these pages in the AISTech 2015 May Show Guide and Program.

Please note: Includes all exhibitors confirmed as of 19 January 2015. For the latest updates, visit [AISTech.org](http://AISTech.org).

**Affival Inc.**[www.affival.com](http://www.affival.com)

Affival is a world leader in innovative cored wire treatment of molten metals. Affival invented the cored wire injection process more than 25 years ago and now has production facilities in Pennsylvania (USA), France, Mexico, South Korea, China, Bhutan and Russia. Affival's team of highly trained metallurgical and electromechanical engineers have numerous years of experience in steelmaking, cored wire technology and scientific analysis, and we look forward to solving your most difficult liquid metal treatment needs.

**Agellis**[www.agellis.com](http://www.agellis.com)

Agellis Group AB designs, manufactures, and markets metal level measurement and slag detection systems worldwide. We have measurement solutions for most molten metal applications: level profile, hot heel, slag thickness and slag detection for furnaces/smelters, slag thickness and slag detection for ladles, run and drain levels for tundishes/launders and level measurement for slab and bloom molds. Our electronic units have built-in redundancy and expansion capabilities, so that operators can have complete confidence in their current and long-term function. With more than 30 years of experience supplying systems to major steelmakers and non-ferrous producers, Agellis Group AB can provide accurate and reliable solutions for your plant.

**Aginzo Consulting Group**[www.aginzo.com](http://www.aginzo.com)

Aginzo Consulting Group is a specialized information systems consulting firm that focuses entirely on the metals industry. We work with all of your information, from the office to the shop floor, for fully integrated analysis and solutions. Our goal is to help you realize your IT vision and create solutions and improvements throughout your organization, even in the face of limited resources, time or money. Aginzo Consulting Group *is* metals.

**AIC Capitanio Automation**[www.aicnet.it](http://www.aicnet.it)

Automazioni Industriali Capitanio (AIC) offers the steel industry excellence and constant attention to detail in design of complete systems covering command, control and monitoring components. The outcome can lead to a safer, higher-performing and more efficient production process.

**AIM Machinery**[www.aimmachinery.com](http://www.aimmachinery.com)

AIM Machinery designs, engineers, and manufactures heavy-duty material and product handling equipment for all areas of production in the steelmaking industry. Categories of products include furnace and oven loaders; lifting devices; roller conveyors; belt, bucket and chain conveyors; coil handling equipment; pipe handling equipment; transfer cars; equipment to facilitate improved maintenance; and specialty equipment such as turnover devices. Strengths include on-time delivery, competitive pricing, attention to detail, and the ability to solve the most difficult operating and maintenance problems.

**Air Products**[www.airproducts.com](http://www.airproducts.com)

As a leading global industrial gas supplier to the steel industry, Air Products pioneered the on-site gas supply concept 60 years ago. Today, our comprehensive range of industrial gases plus energy- and cost-efficient technologies can help you save money throughout your operations. From the meltshop to the rolling mill, we've helped customers realize operating cost savings through proprietary technology in combustion, gas injection, shrouding and heat treating. Our key expertise includes technologies for blast furnaces, BOFs, EAFs, AODs, rolling mills and finishing mills. Stop by our booth to learn more about gas supply options and technology designed to reduce your costs.

**AirStream Systems Inc.**[www.airstreaminc.ca](http://www.airstreaminc.ca)

High-efficiency meltshop fan rotors designed to upgrade existing fans in dirty applications. Meltshop ID fan troubleshooting and upgrade experts. AIST 2012 Energy Achievement Award winner for upgrade of Nucor's existing ventilation system fans. Saved 2.1 MW, increasing flow by 3% while using one less fan: three vs. four. Accuracy: Missed predicted savings by 7 kW (+ error = 0.3%). AirStream benefits include:

- Reduce energy use by 15% to +50% for same performance.
- Reduce abrasive wear by factor of 2-4 times, minimum.
- Increase performance up to 30% with same motor and fan housing.

Scope of supply includes resolving existing issues: vibration, cracking, dust buildup, noise, etc. Upgrades range from 300 to 9,000 hp. Also upgrade fans for BOF, sinter, kilns, SVS, etc. Complete turnkey or equipment-only supply.

**Ajax TOCCO Magnethermic**[www.ajaxtocco.com](http://www.ajaxtocco.com)

Ajax TOCCO Magnethermic Corp. (ATM) is a world leader in induction heating and melting equipment for a wide variety of applications. Our equipment has been supplied for industries such as steel, forging, foundry, heat treating, pipe and tube, vacuum melting, custom applications and ovens. Power supplies ranging from 1 kW to 12,000 kW and frequencies from 60 Hz to 450,000 Hz can handle almost any induction application. ATM also offers installation and construction services and aftermarket support around the globe. Through maintaining a continuing research program along with a commitment to expanding induction technology, Ajax TOCCO is dedicated to bringing new ideas to the world's basic metals industries.



The logo for Ace World Companies features the word "ace" in a bold, red, lowercase sans-serif font. Below it, the words "World Companies" are written in a smaller, black, uppercase sans-serif font. The text is enclosed within a large, black, stylized swoosh that curves around the right side of the text.

# ace

World Companies

Overhead Cranes, Components  
and Engineered Systems



## Industries Served:

- Steel Mills
- Steel Service Centers
- Manufacturing
- Mining
- Power Generation
- Concrete
- Oil & Gas
- Pulp & Paper
- Aerospace
- Lumber
- Marine
- Automotive

Since 1987 Ace World Companies has supplied the industry with American-made, custom designed material handling solutions. We design and manufacture some of the most sophisticated industrial cranes and engineered systems in use today. The steel industry is one of our largest customers and thus a primary focus. We provide cranes and special machinery for every application. At Ace World Companies our engineers are dedicated to helping you find the solution you need to get the job done.



## Albarrie Environmental Systems

[www.albarriefiltration.com](http://www.albarriefiltration.com)

Albarrie Environmental Services manufactures a complete range of particulate filter bags designed to fit in any dust collector system, including pulse jet, shaker and reverse air systems. Albarrie also supplies baghouse accessories, including cages, door seals, dryer/drum seals and fluorescent tracing compounds. Albarrie's baghouse services include: rapid-response troubleshooting, baghouse inspections and maintenance, filter bag replacement, and high-efficiency filter bag cleaning, which is performed in place inside the baghouse. Albarrie's stringent quality assurance procedures on all fabrics and filtration products we produce, combined with years of experience, have established Albarrie as a global leader in the supply of dust collector optimization services, filter media and fabricated filtration products.

## Allor Mfg. Inc./Plesh Industries

[www.allorplesh.com](http://www.allorplesh.com)

Allor Manufacturing/Plesh Industries custom designs and manufactures material handling products used throughout the steel mill process. We have been serving the steel industry for more than 40 years. Products include conveying systems and related chain components, including coil conveyors, drawbenches, apron conveyors, as well as specialty wheels and bearings. We also specialize in leveling, and we are capable of manufacturing cassettes for processing lines and complete plate levelers for hot, cold and heat-treat lines. In addition to upgraded leveling components, rolls, backup bearings and thrust bearings, we provide technical assistance to help improve efficiency and reduce downtime. We also provide rebuild services for chain conveyors and levelers.

## AMEPA America Inc.

[www.amepa.de](http://www.amepa.de)

AMEPA America Inc. specializes in process control technology. Our ladle

slag detection system is recognized as an industry leader, with more than 375 applications. Technologies include coal flowmeters (CFMs) for the blast furnace; a thermographic slag detection (TSD) system for the BOF/EAF tapping process; a residual steel detection (RSD) system, used to maximize caster yield by automating the tundish draining practice; highly innovative finishing technologies, such as optical oil film measurement for both spot and on-line measurement of coil and strip; and optical strip surface roughness measurement, again located in the production line rolling process.

## American Chemical Technologies Inc.

[www.americanchemtech.com](http://www.americanchemtech.com)

American Chemical Technologies Inc. (ACT) was founded in 1977 on the fundamental principle of providing premium lubricants, supported with unsurpassed "Pride in Personal Service." Today, ACT is an internationally recognized leader in the manufacture and development of highly specialized, environmentally friendly, superior lubricants for the industrial, marine and power markets. As ACT continues to grow, our commitment to setting new standards for product performance and customer satisfaction will remain the foundation of our mission. For more information regarding our products, FR WG 200-D, EcoSafe® V200, EcoSafe® FR, EcoGear®, Neptune® Hydraulic and Gear Lubes, visit our booth.

## American Roller Bearing Co.

[www.amroll.com](http://www.amroll.com)

American Roller Bearing Co. designs, manufactures, services, and repairs tapered roller, cylindrical roller, spherical roller, ball, spherical plain and special bearings for heavy-duty applications. American Roller Bearings are made in the USA. Since 1911, we have provided engineered bearing solutions for many of the toughest applications in the steel industry. With sizes up to 84 inches (2,133 mm), American's line of high-quality bearings cover industry standard inch and ISO series radial and thrust bearings,

as well as engineered specials to meet your unique application demands. Our Reconditioning Program helps extend the life of your existing bearings and can be customized to meet your specific needs. See the American Roller Bearing difference. Visit us at AISTech 2015.

## American Sensors Corp.

[www.americansensors.com](http://www.americansensors.com)

ASC features advanced, "smart" infrared, laser- and microwave-based sensors and systems to provide "plug and play" solutions for steel, aluminum and other metals production processes. Automatic compensation for changes of emissivity, temperature, dimensions and distance make ASC sensors and systems reliable and accurate, even through steam, water, and in the presence of scale. Sensors feature automatic gain/emissivity calculation and measurable brightness energy/temperature. Turnkey systems include: temperature profile (relative and absolute), cut-to-length and length measurements, width taper and thickness measurements, and speed and mass flow measuring systems. Commissioning and training are available worldwide.

## AmeriFab Inc.

[www.amerifabinc.com](http://www.amerifabinc.com)

AmeriFab Inc., based in Indianapolis, Ind., is a supplier of custom-designed, -engineered (including FEA) and -manufactured melting and refining furnaces, ancillary equipment, water-cooled equipment and systems, offgas duct systems, and current-conducting electrode arms. Patented and proprietary products that increase operational uptime and profitability include AmeriSpline® (steel and copper), AmeriBronze®, AmeriAntiSlag® and AmeriCOP® technologies.

## AMETEK

[www.ametek.com](http://www.ametek.com)

Please stop by and see our Factory, LAND and Spectro Automation Divisions.



- **AMETEK Factory Automation**

[www.ametekapt.com](http://www.ametekapt.com)

Linear displacement transducers, DeviceNet sensors and Allen-Bradley PLC bus card products, camboxes, cable and hose carriers, programmable limit switches, liquid level controls for water, wastewater applications, conductance probes, float sensors, level control packages and industrial brakes.

- **AMETEK LAND**

[www.ametek-land.com](http://www.ametek-land.com)

Monitors and analyzers for industrial infrared temperature measurement, combustion efficiency and environmental pollutant emissions. Infrared temperature measurement product range includes on-line thermometers and systems, portable infrared thermometers, thermal imagers and infrared line-scanners. Combustion and environmental monitoring products, including combustion efficiency monitors, stack gas emissions analyzers, portable gas analyzers, coal-fire detection systems and turbine blade temperature monitoring.

- **AMETEK Newage Testing Instruments**

Broad range of hardness testers with unique features and a wide range of capabilities. Custom solutions for in-process hardness testing of oil pipe to plate metal. Also, fully automated systems for case depth hardness analysis and a complete array of services, including installation, calibration, repair and phone support.

- **AMETEK Process Instruments**

Process analyzers and instrumentation, including Thermox combustion efficiency analyzers, clean gas trace oxygen analyzers, DYCOR mass spectrometers, residual gas analyzers, and ProLine and ProMaxion series of process mass spectrometers.

## **AMI GE**

[www.amige.com](http://www.amige.com)

AMI GE offers automation and control innovation, drive systems, meltshops,

EAF optimization and industrial automation.

## **ANDRITZ Herr-Voss Stamco**

[www.herr-voss.com](http://www.herr-voss.com)

ANDRITZ Herr-Voss Stamco designs, engineers and manufactures a complete line of coil processing equipment. The company also has an extensive mill service group with five plant locations servicing various areas of the United States. Services include: mill roll finishing, chock repair, tension leveler module rebuilding, and mandrel and slitter reconditioning for all brands. We also service all types of equipment for cold and hot mill processing lines, including mandrel rebuilds, entry guidebox rebuilds, chock rebuilds and other miscellaneous equipment. In addition, we have test stand capabilities to handle all types and sizes of hydraulic gap control and automatic gauge control cylinders.

## **ANDRITZ METALS Inc.**

[www.andritz.com](http://www.andritz.com)

Get ready for the new generation of high-strength steel with our furnaces for heat treatment and reheating, pickling lines including acid regeneration, processing lines including galvanizing and annealing, as well as our rolling mills. Be sure to review our solutions for saving resources and energy through revamp, upgrade and rebuilds, as well as our solutions for new greenfield or brownfield projects.

## **Andronaco Industries**

[www.andronaco.com](http://www.andronaco.com)

Andronaco Industries is a world leader in the engineering, development, and production of fluoropolymer and corrosion-resistant composite technologies specifically designed for the most corrosive chemical fluid processing applications. We eliminate mechanical failures due to internal and external corrosion, increase safety, and increase the reliability and service life of your chemical fluid processing equipment. Our formulations, coupled with advanced molding processes, create durable and lightweight piping systems, valves, expansion joints,

flow control technologies, and other fluid processing system solutions for the most demanding corrosive applications. Our products serve industrial manufacturing facilities where corrosive chemicals are produced, stored, transported or consumed.

## **ANT Automation LLC**

[www.ant-automation.com](http://www.ant-automation.com)

Applying New Technologies (ANT) Automation is dedicated to providing high-quality automation services and state-of-the-art industrial software development for a wide range of industries. We count on a cohesive group of professionals with an average of 15 years of experience in a wide range of technologies and areas such as engineering, math, metallurgy and information technology. Our mission is to provide innovative products and quality services to our clients using our full capacity and experience in industry solutions and to build a profitable firm capable of developing and retaining highly skilled professionals. Specialties include software programming, process models and optimization, infrared vision, product development, industrial automation and SCADAs.

## **ARKO By PMP**

[www.arko.mx](http://www.arko.mx)

We supply products and solutions for the steel industry. We specialize in structural and water-cooled equipment for EAFs, LFs and BOFs. Water-cooled equipment: sidewall panels, ducts, roof panels, deltas, balconies, chimneys, etc. Mechanical-structural: upper shells, lower shells, roof structures, tilt platforms, gantry, ladles, transfer cars, electrode arms, post-combustion chambers, etc. Material injectors: our injection systems are designed with the latest control tools, with up to three injection ports per system and configurable to fulfill the requirements of customers. We have maintenance, installation and engineering services. Process analysis and spare parts like cables, hoses, instrumentation, controls, electrical insulation, copper connections, hydraulic systems, etc.

**ASB Industries Inc.**[www.asbindustries.com](http://www.asbindustries.com)

ASB Industries in Ohio (USA) provides thermal spray and weld hard surfacing on equipment to enhance component performance. Solutions include engineered surfacing to reduce wear from abrasion and protect surfaces in high-oxidizing temperature environments. ASB Industries has developed many coating solutions, including ceramic coatings for seal surfaces, tungsten carbide coatings for extreme wear and gripping, and furnace roll coating systems to reduce oxide pickup on high-strength steel strip production. ASB provides turnkey pre- and post-machining along with assembly and disassembly. Our large 60-inch cylindrical grinder was recently upgraded with CNC controls to achieve complex crowns and roll shapes critical for the production of high-strength steels.

**ASKO**[www.askoinc.com](http://www.askoinc.com)

ASKO is a leading worldwide supplier of shear knives, liners, wear parts, slitter tooling, saws, and reconditioning services for the metal producing and metal processing industries. Founded in 1933, ASKO supplies the steel industry with the widest range of tooling for sheet, plate, pipe and long products producers. A partial list includes caster shear knives; crop, cobble and cold shear knives; pickle line sidetrimmers, scrap choppers and upcut knives; housing, chock, and specialty liners and wear parts; saw blades; welder die reconditioning; air knives for coating lines; and knife reconditioning and regrinding. Visit us online at [www.askoinc.com](http://www.askoinc.com).

**Association of Women in the Metal Industries (AWMI)**[www.awmi.org](http://www.awmi.org)

The Association of Women in the Metal Industries (AWMI) is an organization of professionals, founded in California in 1981, to promote and develop the growth of women in the metal industries. AWMI believes that women in similar industries can benefit themselves and their companies through relationships, education and

shared knowledge. The programs and activities of AWMI are intended to enhance member skills and experience, address challenges confronting the industry, and promote career growth, with the ultimate goal of increasing the number of women employed in the metal industries. Membership is open to both women and men seeking to develop all aspects of their professional development. AWMI has 21 chapters across the U.S. and Canada and provides both individual and corporate memberships.

**Atlantic Track – Crane Runway Division**[www.atlantictrack.com](http://www.atlantictrack.com)

The Atlantic Track Crane Runway Division utilizes all our resources to understand, analyze and develop engineered solutions that meet the needs of our valued clients. Our impressive portfolio of crane rail-related products, installation services (ATRS) and other ancillary support sets makes us an essential consulting, material supply and installation partner for all crane runway systems projects. In addition, Atlantic Track offers the CRANRAIL® rubber nose clips, steel-reinforced pad and spherical bearing girder to column tie-back assemblies. We are prepared to assist with all overhead or concrete-mounted crane rail systems, transfer car systems or in-plant railroad systems.

**Atlas Machine & Supply Inc.**[www.atlasmachine.com](http://www.atlasmachine.com)

Atlas Machine & Supply is an industrial repair service provider that offers a variety of solutions to the steel industry. Our full-service machine, weld thermal spray and grind shops can complete most repairs under one roof. These repairs include roll coatings, shears (Miebach and others), mandrels and leveler cassettes. Our roll solutions include journal repair, weld overlays and thermal sprays (including HVOF carbides). We also have teams of field machining experts ready to handle challenges worldwide. Known best for their rapid response, our field machinists are armed with the best equipment in the industry and are

prepared to tackle your toughest problems. Call +1.855.GO.ATLAS today to start making difficult repairs easier.

**ATS SpA**[www.ats.ud.it](http://www.ats.ud.it)

ATS SpA, located in the northeast of Italy, has specialized in design, manufacturing and commissioning of plants and equipment for the metal industry since 1993. ATS' key products are complete plants for steel production, including: meltshops, grinders, rolling mills, high-speed lines for rebar production, wire rod lines and packaging lines. The ATS product portfolio includes finishing lines for seamless and welded pipes, in particular: API pipe finishing lines, mechanical/automotive finishing lines. A newly introduced automatic packaging system for tubes and bars is able to form round, hexagonal and square stacks of steel and non-ferrous tubes and bars.

**AustralTek LLC**[www.australtek.com](http://www.australtek.com)

Our dedicated automation team, with extensive experience in the metals industry, has executed several general automation projects, special electronics designs, electrical engineering, panels, cabinets, and complete level 1 and level 2 projects in North America, Asia, Europe, Oceania and South America. With more than 50 finalized projects since 2008, AustralTek covers all areas from level 0 to level 3. When it comes to products, our Physical Ladle Tracking (PLT) technology, based on thermally resistant radio frequency identification (RFID) tags and sensors, can be installed in ladles, tundishes and torpedo cars to identify and detect these assets around the plant. We also offer the first complete manufacturing execution system specially designed and built for meltshops.

**Babcock & Wilcox MEGTEC**[www.megtec.com](http://www.megtec.com)

B&W MEGTEC TurboSonic will custom design the most effective solutions to meet your gas conditioning and air pollution control



requirements. SoniCool™ evaporative gas cooling and conditioning uses a finely atomized water spray to cool EAF or BOF offgases from over 2,400°F (1,315°C) to as low as 240°F (115°C), protecting ductwork and downstream air pollution control equipment from high temperature and sparks, while providing rapid cooling for dioxin and furan control. Other products include Turbotak rugged nozzles, the TurboVenturi scrubber, the SonicKleen™ WESP, Pulse Jet Fabric Filter and Multiclone® Dust Collector. B&W MEGTEC also provides upgrades or retrofits to existing systems, including nozzles or spray towers for acid gas absorption.

### **Baldor Electric Co.**

[www.baldor.com](http://www.baldor.com)

Baldor Electric Co. is a marketer, designer, and manufacturer of industrial electric motors, drives and mechanical power transmission products. We sell products under the Baldor-Reliance, Baldor-Dodge, Baldor-Maska and ABB brand names. Baldor is a member of the ABB Group.

### **Baltimore Aircoil Co.**

[www.baltimoreaircoil.com](http://www.baltimoreaircoil.com)

Baltimore Aircoil Co. (BAC) produces modular cooling towers, closed-circuit evaporative coolers and condensers, and hybrid coolers for industrial processes. Many open-loop and closed-loop systems are served by these products: cooling of caster molds, machine and spray water systems, EAF meltshops, blast furnace tuyeres and plates, air compressors, electric furnaces and transformers, among others. Our expansive product lines enable us to deliver a product configured with materials of construction and mechanical design for steel industry service. For more than 70 years, reliability, energy efficiency and ecological responsibility have been at the core of our business, making BAC a leader in evaporative heat transfer technology.

### **Bar Hydraulics Inc.**

[www.barhydraulics.com](http://www.barhydraulics.com)

Bar Hydraulics Inc. specializes in effective, non-welded hydraulic piping systems. Our services include system design, manufacturing, tubing and piping installation. Bar Hydraulics has been performing precision service for more than 15 years. Our engineers have developed leading-edge techniques and methodologies that allow us to provide unparalleled service. Bar Hydraulics facilities are located in Hamilton, Ont., Canada; Liberty Center, Ohio, USA; Milan, Italy; and St. John's, Nfld., Canada. We service the globe from these locations.

### **BASF Corp.**

[www.buildingsystems.basf.com](http://www.buildingsystems.basf.com)

BASF is a leading supplier of construction products for commercial, residential, industrial and infrastructure projects. For the iron and steel industry, our offering includes epoxy and cementitious grouts for the precision alignment of critical machinery, concrete repair and strengthening, corrosion protection and flooring solutions for durability and chemical resistance. Our solutions are available globally and supported by a dedicated, trained team of technical experts.

### **BEDA Oxygentechnic USA**

[www.beda.com](http://www.beda.com)

BEDA Oxygentechnic sets a world standard for oxygen lancing equipment with the highest performance and safety for both burning and injection lancing. The highest flowrate and safety for electric arc furnace burners are achieved by BEDA 2-function safety devices. The BEDA argon 1,100° ladle bubbling sets assure the most reliable secondary metallurgy in the ladle.

### **Belt Conveyor Guarding**

[www.conveyorguarding.com](http://www.conveyorguarding.com)

Belt Conveyor Guarding specializes in the design and manufacture of safety guarding solutions. We provide customized products and services that have been engineered to eliminate workplace injuries while improving

productivity. Our customers include some of the world's largest users of bulk material handling equipment from the steel manufacturing, power generation, mining and cement/aggregate/ready mix industries. Our customers benefit by: eliminating workplace injuries; improving productivity; decreasing fines, citations and costly shutdowns; and ensuring compliance. In addition to site assessments and sales, we work with MSHA, OSHA and various Canadian Ministries of Labor to further the drive for safety in the workplace.

### **Belzona Inc.**

[www.rumfordgroup.com](http://www.rumfordgroup.com)

While erosion, corrosion and physical damage pose a threat to many industries, we understand that the real issues are downtime, efficiency decline, profit loss and safety hazards created by the root problem. Belzona product lines are manufactured to resolve these problems by reducing labor by:

- Eliminating the need for disassembly, welding and post-weld heat treatment.
- Decreasing costs through increased asset availability.
- Enhancing safety by allowing in-situ cold work with VOC-free materials.

### **Berry Metal Co.**

[www.berrymetal.com](http://www.berrymetal.com)

Berry Metal Co. is a leading designer and manufacturer of technologies for the iron and steel industry. Products and services include blast furnace UltraLife® copper and cast-iron stove lining technology, blast furnace equipment repairs, blast furnace lining wear monitoring systems, water-cooled oxygen lances, post-combustion and double-flow post-combustion lances, EverStraight™ post-combustion lances, deskillung lances, camera lances, slag-splashing lances and solids/oxygen injection lances for BOFs, Q-BOPs and EAFs. Berry Metal provides engineering, project management, operational assistance, field service and technical support. Alliance partners: Falcon Foundry with UltraLife water-cooled copper

technology, and Process Metrix with furnace laser contouring technology systems.

### Berthold Technologies USA LLC

[www.berthold-us.com](http://www.berthold-us.com)

For more than 60 years, Berthold Technologies has been a worldwide leader in caster mold level measurement technology. The Berthold LB452 CastXpert is an industry standard for radiometric mold level measurement systems. The LB452 CastXpert system can handle up to four separate measurement channels with a single electronics unit. Coupled with the LB 6739 GammaCast scintillation detector, the LB452 yields superior accuracy and performance. With an electronics cycle time of 5 ms, it is also the fastest and most reliable radiometric mold level system on the market.

### Beta LaserMike

[www.betalasermike.com](http://www.betalasermike.com)

Beta LaserMike manufactures LaserSpeed® non-contact speed and length gauge by NDC Technologies measures moving material without contact, making it a direct replacement for encoders and tachometers. Our low-cost gauges were developed for the harsh environments of metals. The rugged LS8000E is ideal for measuring elongation at skinpass and temper mills, measuring coil lengths on process lines, and controlling bar, rod and tube mills. The LS8000X is an ideal system for extreme environments. Our LS9000 is ideally suited for controlling the torch cutter on continuous slab and billet casters, position control for shearing operations, and any application requiring accurate speed or length measurements.

### Birmingham Rail & Locomotive

[www.birminghamrail.com](http://www.birminghamrail.com)

Birmingham Rail's highly motivated professionals operate as an extremely effective group, offering the highest quality products and unparalleled services to the overhead crane runway systems industry. You can count on

Birmingham Rail for solutions to all your crane rail and related accessories demands. The proper crane rail runway system design, fabrication and installation will provide years of low-cost maintenance not only for crane runways, but overhead crane equipment itself. We have all ASCE and crane rail sections, along with joint bars, clips, pads and custom-designed/special anchoring fasteners. We can help solve your problems due to rail deterioration, friction stress or wheel-to-rail interface.

### Bi-State Rubber Inc.

[www.bistaterubber.com](http://www.bistaterubber.com)

Bi-State Rubber is the North American manufacturer of the FLEXOWELL brand of incline pocket belts. We also manufacture replacement weigh feeder belts with sidewalls and vanner edges, cleated belts and flue duct expansion joints. We distribute the ARGONICS line of conveyor belt scrapers and VAN GORP line of conveyor pulleys. In addition, we handle various materials handling hoses, boots/bellow, as well as other special rubber and fabric-related items.

### Blaschak Coal Corp.

[www.blaschakcoal.com](http://www.blaschakcoal.com)

Blaschak Coal Corp. is one of the country's top anthracite producers. Blaschak is a miner, preparer and marketer of Pennsylvania anthracite. Blaschak is a market leader and one of the few fully integrated U.S. anthracite companies with a large reserve base, multiple mines and preparation plants, a bagging plant, both rail and truck loading facilities, and extensive marketing operations serving a wide range of end markets, including home heating, steel and water filtration.

### Bloom Engineering Co.

[www.bloomeng.com](http://www.bloomeng.com)

Bloom Engineering has developed a reputation for quality industrial burners and combustion systems. Our professional staff and years of experience have been the cornerstone of our business. Bloom's products can be used for a variety of applications, and can

be operated with a wide array of fuels and capacity ranges. The industrial burners operate with low to ultralow NOx emissions. Bloom Engineering prides itself on having in-depth knowledge of the various heating applications in which its equipment is used. Bloom's customizable product line, extensive installation list, R&D capability and on-site field service experience allow Bloom the ability to provide the best possible solution for each unique situation.

### Blundstone Footwear

[www.blundstonesafetyfootwear.com](http://www.blundstonesafetyfootwear.com)

Blundstone, founded in 1870, is Australia's largest footwear company, selling products in 37 countries. It is noted for rugged, long-wearing, comfortable footwear.

### Boldrocchi srl

[www.boldrocchi.it](http://www.boldrocchi.it)

Boldrocchi Group, headquartered in Italy since 1909, designs and manufactures custom-engineered equipment to fit customers' specific needs. Boldrocchi is the right partner to design, supply and successfully start up the complete gas handling and dedusting system of any steel plant. The group has subsidiaries in India, Egypt, Europe, the U.S. and Brazil, and can provide site services and assistance worldwide. Boldrocchi is ISO 9001 certified. Boldrocchi's ironmaking scope includes dedusting systems for the cast- and stockhouse, raw material and coal handling. In steelmaking, the large volumes of raw gas and volatiles increase the difficulty in designing a proper gas treatment plant, for which Boldrocchi has a long list of applicable products.

### Boll Filter Corp.

[www.bollfilter.com](http://www.bollfilter.com)

Boll Filter is a globally operating manufacturer and market leader for filtration technology. We protect valuable equipment and processes, with applications including emulsions, lubricants, process water and waste streams. For more than 60 years, Boll Filter has been supplying equipment

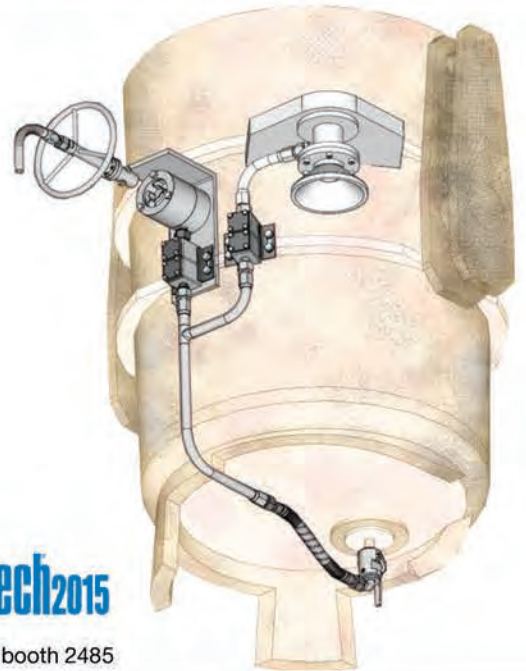


## BEDA<sup>®</sup> Ladle Metallurgy

**Save Argon Costs - up to 30 %  
Quick Pay-off**

**Ladle stirring systems for perfect tightness**

- Less Argon costs
- Heat resistant up to 1,100°F
- Full metallic design, no rubber sealings
- Extended lifetime of porous plug
- Improved metallurgical efficiency
- Increased stirring effect
- Life-saving gas tightness



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## BEDA<sup>®</sup> Oxygentechnic

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www.beda.com • BedaUSA@msn.com • Phone (330) 382-9811 • Fax (330) 382-9812

for the most demanding applications. OEM parts and service available from our U.S. office in Michigan. We will exhibit our Boll Filter Model 6.18 and Model 6.64.

### Brady IT Solutions

[www.bradyplc.com](http://www.bradyplc.com)

Brady is a software systems provider for the metals industry. We specialize in the areas of raw materials procurement and inventory management. Our application-specific platforms complement existing ERP systems and give the industry greater visibility and control in difficult areas of ROI performance. Find out how to get control your process and cost on a daily basis. Come talk to us and we will show you our expertise. Let us show you some of the hidden areas of untapped opportunity for your ROI. Come see us during the show! A conversation with us just might be the best decision you make this financial year! Brady Solutions — impacting your business every day, every minute.

### BRAUN Machine Technologies

[www.braun-us.com](http://www.braun-us.com)

BRAUN is a leading manufacturer of high-performance abrasive saws and high-pressure grinding machines, as well as associated material handling and automation systems for the international steel and manufacturing industries. BRAUN also provides expert planning engineering and professional life cycle support, including OEM spare parts supply, equipment health checks, preventive maintenance service and equipment modernization. BRAUN does business on a worldwide basis. Main references in North America include Latrobe Steel, Scot Forge, Carpenter Technology, Valbruna Slater Stainless, The Timken Co. and ATI Allvac. The parent company, BRAUN Maschinenfabrik GmbH, is headquartered in Vöcklabruck, Austria. The U.S. headquarters of BRAUN Machine Technologies LLC are in Vienna, Ohio.

### Brilex Inc. – Taylor-Winfield Technologies Inc.

[www.thebrilexgroup.com](http://www.thebrilexgroup.com)

The Brilex Group of Companies, which includes Brilex Industries, Taylor-Winfield Technologies and Quality Machine, is committed to providing high-quality fabrications and products to the steel industry with superior customer service and competitive pricing. Brilex Industries performs build-to-print heavy machining/fabricating and machine assembly services. Taylor-Winfield is an original equipment manufacturer of coil joining and heavy material handling equipment with ongoing replacement spare parts and field service support. Quality Machine specializes in small to medium machining of steel, aluminum and brass/bronze components. The Brilex Group of Companies is dedicated to bringing advanced manufacturing solutions to our customers that enable them to succeed in today's ever-changing markets. For more information, visit: [www.brilex.com](http://www.brilex.com) or [www.taylor-winfield.com](http://www.taylor-winfield.com).

### Brokk

[www.brokkinc.com](http://www.brokkinc.com)

Brokk is a leading manufacturer of remote-controlled demolition machines. Hundreds are in use around the world in steel mills, foundries and non-ferrous processing plants. Incredible power combined with great precision make these state-of-the-art machines ideal for the rigors of metal processing applications. Seven models ranging from just 1,100 lbs. to over 12 tons are available to tackle challenges from debricking inside torpedo cars to tearing out 160-t ladles, clearing tapholes or removing slag from furnace mouths, cleaning degassers and everything in between. Visit our booth to learn how Brokk machines can solve your most confounding problems safely, quickly and efficiently.

### BSE

[www.bse-america.com](http://www.bse-america.com)

BSE supplies proven technology for EAFs, at its steelmaking facility BSW: we develop and run high-end products

for the industry since 1983. We operate the first tiltable virtual lance burner system in the world. This unique system already achieves top results in regards of performance and maintenance. Additionally, BSE has installed a robot (MultiROB) at its EAF with versatile functionality complying with highest safety standards. We also offer EAF, LF and CCM modernization, environmental technology and engineering services. As one of the leading consultants for high-productivity and low-cost steel mills, we are able to support you. We help to reduce costs and increase productivity, BSE has proven its capabilities in many EAF steel mills around the world.

### Burndy LLC

[www.burndy.com](http://www.burndy.com)

BURNDY® has a comprehensive offering of grounding products (HYGROUND® compression, BURNDYWeld® exothermic, mechanical grounding). BURNDY grounding connectors are systems-engineered to provide the utmost in system integrity as well as to withstand the harshest of environments.

### Busch Vacuum Pumps and Systems

[www.buschusa.com](http://www.buschusa.com)

Busch Vacuum Pumps and Systems is one of the largest manufacturers of vacuum pumps, blowers and compressors in the world. With more than 50 years of experience, our qualified personnel are constantly developing innovative technologies that will define the vacuum world of the future. We support advanced manufacturing and industry across the U.S. with our extensive product portfolio of high-performance vacuum pumps and systems. As a recognized leader in the vacuum equipment industry, we provide value in and around our products. We take pride in differentiating ourselves by being more than just a pump supplier. We work closely with our customers to provide ideal vacuum solutions that are mutually beneficial.



## Butech Bliss

[www.butechbliss.com](http://www.butechbliss.com)

Butech Bliss will be available to discuss hot and cold rolling mill equipment, mill modernization programs, associated coil handling equipment, and hydraulic automatic gauge control (HAGC) cylinder replacement and rebuilds. New mill types available from Butech Bliss include single-stand reversing mills and temper mills. Butech Bliss also offers heavy-gauge, cut-to-length lines complete with its hydraulic roller leveler technology, coil cars and stand-alone side trimmers, scrap choppers, mill-duty shears and plate leveling equipment. Services include expert rebuild and repair services, engineering studies and contract manufacturing services. Butech Bliss also provides push-pull pickling lines and work with Nelson Steel Consulting & Technology Group to provide state-of-the-art pickling process technology and know-how.

## C & E Plastics Inc.

[www.ceplastics.com](http://www.ceplastics.com)

C&E Plastics Inc. is a highly experienced, fully integrated U.S. supplier of custom thermoplastic process equipment for metal finishing. Since 1976, we have been designing, manufacturing, installing and servicing engineered equipment for pickling, plating, galvanizing and other metal finishing operations. Products include tanks, covers, fume exhausts and ductwork, piping, off-line tanks and secondary containment systems. We have provided continuous strip and push-pull strip complete wet sections, countless replacement tanks and retrofitted equipment designs worldwide. We offer field services and repairs 24/7. Please contact us with your needs: Cliff Crighton, [clifford@ceplastics.com](mailto:clifford@ceplastics.com); Tom Wilding, [twilding@ceplastics.com](mailto:twilding@ceplastics.com); or Tony Furka, [tfurka@ceplastics.com](mailto:tfurka@ceplastics.com).

## C.R. Cylindrical Roller Bearings

[www.csr.com](http://www.csr.com)

C.R. s.r.l. manufactures special cylindrical roller bearings for industrial applications and internal movement plants and equipment. The bearings in our range of production are a guarantee of high quality, for the producers and users of:

- Steel and aluminum working machines.
- Steel and aluminum plants.
- Coil conveyors.
- Forklift masts and internal handling plants.

## Cableform Inc.

[www.cableform.com](http://www.cableform.com)

Cableform Inc. provides safe, reliable and environmentally sound DC control solutions for harsh industrial environments. Patented technology and continued innovation keep Cableform on the leading edge of DC motor control solutions for severe-duty applications. Cableform's core business includes engineering, design, testing, production and technical customer support of technologically advanced

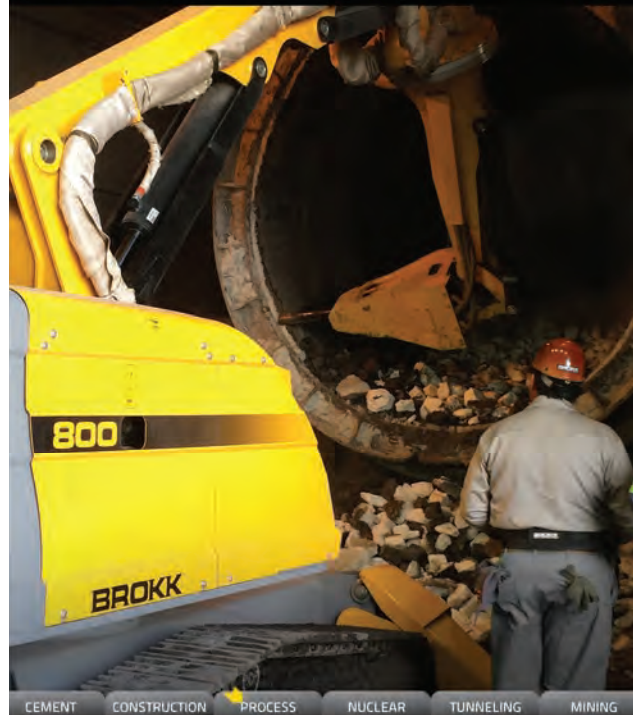
# Remote Controlled Machines

## The next generation of remote controlled machines for steel mills has arrived!

Clean ladles, runners, furnaces, torpedoes and kilns quickly, safely and accurately with a state-of-the-art Brokk remote-controlled machine. Our new B800 is a 12-ton powerhouse with over 31 feet of vertical reach in a compact package. We mount a hard-hitting, heat-shielded Atlas Copco breaker on a custom-designed, three-piece arm that rotates 360 degrees, and include a special bit for heavy-duty prying. A new two-way radio control box offers finely tuned operation from a safe distance.

For more than 30 years, Brokk machines have proven themselves in mills and foundries all over the world. Contact us to find out how you can take your processes to the next level.

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DC electric control solutions from 24 to 1,200 volts DC and 2,000+ amps from battery, line and catenary power supplies. Applications include: mining locomotives, scoops, load-haul-dumps, coal haulers and pumps; steel industry cranes, hoists and transfer cars; shunt and series wound DC motor soft starts; transit vehicle controls, inverters and solid-state contactors; and dockside cranes and winches.

### Caldwell Group Inc., The

[www.caldwellinc.com](http://www.caldwellinc.com)

Caldwell mill-duty lifters — the safe and reliable solution you need. Before you make a purchase, learn what the ASME standards mean and how they affect your search for that new piece of material handling equipment. Stop by our booth to check out Caldwell's products that will increase your plant productivity and safety. Items include coil grabs, rim and ingot grabs, vacuum lifters, sheet lifters, C-hooks, power rotating crane blocks, slab tongs, magnet beams, lifting beams and much more. Lifters are custom designed for heavy- and severe-duty service per ASME B30.20, BTH-1, design category B, service class 3 or 4. For an application evaluation or questions on Caldwell services, visit our website or call toll-free at +1.800.628.4263. Caldwell celebrated 60 years in 2014!

### Can-Technologies Inc.

[www.can-technologies.com](http://www.can-technologies.com)

Can-Technologies is an engineering product and services company specializing in providing intelligent solutions to a variety of industries. Can-Technologies Automation Group can help you to optimize your processes by increasing productivity, reducing downtime, and increasing the efficiency and safety of your equipment and operation. Can-Technologies Power Group can help you with upgrading and optimizing your power systems from substations, switchgears and MCCs to your AC/DC drives. We can coordinate and mitigate your power systems to reduce the level of arc flash hazard. Can-Technologies Energy Group can help you with energy

conservation methods, algorithms, analysis, monitoring, targeting, tracking, verification and improvements.

### Carolina Strapping and Buckles Co.

[www.carolinastrapping.com](http://www.carolinastrapping.com)

Carolina Strapping and Buckles Co. is a leading U.S. manufacturer of woven and composite lashing/strapping. Carolina Strapping has worked in conjunction with the Association of American Railroads (AAR) to enhance and resolve multiple loading figure applications. Carolina Strapping also continues to work with the National Cargo Bureau with shipments traveling overseas. Carolina Strapping would like the opportunity to talk with you about developing load securement application solutions that are innovative, efficient and cost-effective. Carolina Strapping is headquartered in Gastonia, N.C., and has a tradition of more than 40 years in engineered industrial textiles. Visit us at AISTech 2015 to learn more about how we can improve your business.

### CASTELLINI Officine Meccaniche S.p.A.

[www.castellini.it](http://www.castellini.it)

Castellini Officine Meccaniche S.p.A. is a reliable supplier of rolling mill equipment for the metals industry, recognized internationally as a first-class partner of major engineering, procurement and construction contractors as well as worldwide steel producers. Founded in 1949 in northern Italy, the company specializes in the design and manufacture of rolling mill equipment for processing flat products in hot and cold conditions. Our portfolio includes: new equipment (rolling mill stands, shears, levelers, downcoilers), spare parts (according to OEM drawings or optimized), plant revamping (equipment modernization and process optimization) and maintenance service (equipment repair and refurbishing).

### Caster Maintenance Co.

[www.castermaint.com](http://www.castermaint.com)

At our fully equipped facility in Gary, Ind., USA, trained technicians use the latest equipment to make fast, accurate repairs on your caster segments. Whether you need a simple repair or a complete rebuild, you can expect on-time quality work from Caster Maintenance Co. Our plant handles every phase of repair: inspection, testing, teardown, reassembly, roll refurbishing and realignment. Service from Caster Maintenance Co. includes pickup and delivery of your caster segments up to 100 tons. To expedite your repairs, we maintain an extensive inventory of renewal parts. To ensure optimum stocking levels, we use a computerized inventory system, which gives us the ability to guarantee ready availability of all parts and components, whenever you need them.

### CavCom Inc.

[www.cavcominc.com](http://www.cavcominc.com)

Hear your radio and communicate in high noise, even while wearing respirators! CavCom two-way radio accessories adapt to your current radio system and provide superior hearing protection (up to NRR34). Ideal for steelmaking and finishing, iron producing and forging environments. CavCom products are designed to match the task(s) at hand. Choose from custom-fitted or universal-style earsets to achieve the hearing protection and clear communication you demand and deserve. CavCom representatives work closely with you on-site to ensure proper training is achieved for optimum performance of these unique and effective two-way radio tools. Visit us at AISTech 2015 or call +1.866.547.4988. More information is available at [www.cavcominc.com](http://www.cavcominc.com).

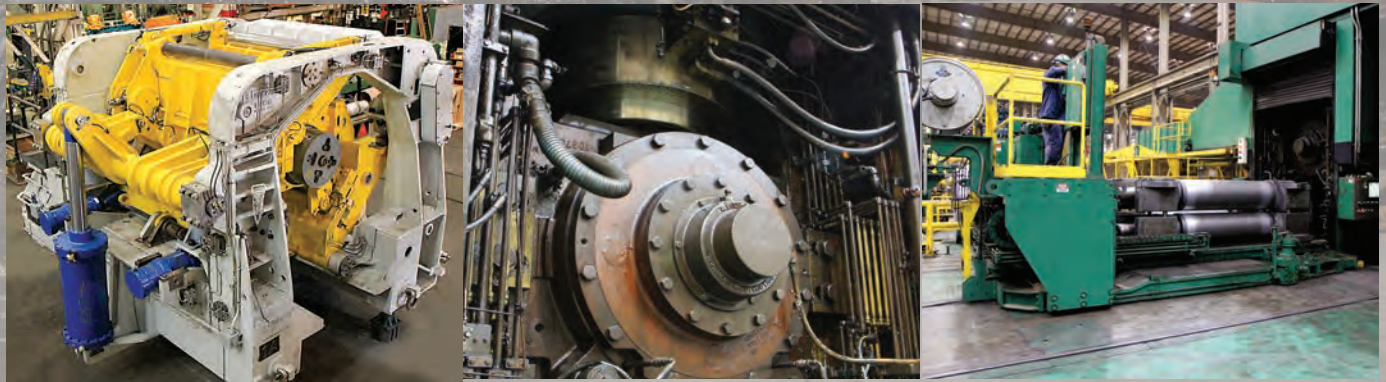
### CCR Technologies Inc.

[www.ccr-technologies.com](http://www.ccr-technologies.com)

CCR Technologies Inc. has developed several product lines that service billet, bloom and slab casting machines. Developing efficiently engineered products has propelled CCR to the forefront of casting technology. With the introduction of bearing-free ladle

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## When it comes to keeping your mill equipment running at high production levels, nobody does it better than Butech Bliss.

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Ferrous and non-ferrous producers around the globe depend on Butech Bliss because we offer some of the most experienced engineering minds anywhere. Butech Bliss offers both trouble-shooting and engineering expertise.

Competitors cannot touch the market niche Butech Bliss has developed in providing tailor-made solutions for our rolling mill partners. Your customers are demanding more because their customers are demanding higher strength steels and specialty alloys for everything from automotive to emerging energy applications.

Learn more about our world-renowned mill technology.  
Call +1 (330) 337-0000, visit [ButechBliss.com](http://ButechBliss.com) or email [sales@butech.com](mailto:sales@butech.com).

If our name is on the machine, it's built better.

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turrets, accurate billet/bloom/slab weighing, dross-free torch cutting and stable flex-link starter bars, CCR has become a complete caster supplier that is ready to design to any organization's operational goals and needs. Being North America's only caster builder, we are proud to have all products 100% manufactured within North America and continue to grow to ensure customer support exceeds all expectations.

### **Cervis Inc.**

[www.cervis.net](http://www.cervis.net)

Cervis Inc. has been honored to serve some of the most demanding and rewarding customers in the harshest environments in the world. We have decades of radio frequency machine control experience. Specializing in overhead bridge crane and locomotive wireless remote control systems for the steel industry, we have custom designed and manufactured complete control systems for customers worldwide. Many of the leading steel producers are standardized on Cervis systems. Our standard systems offer a significant economy-of-scale advantage. Our customers' needs are paramount to our success, and we are dedicated to solving their problems. We back all of our products with a complete staff of design and field engineers.

### **ChemTreat**

[www.chemtreat.com](http://www.chemtreat.com)

ChemTreat's mission is to provide our steel industry customers with water treatment programs and solutions that maximize mill productivity through our unique combination of outstanding service, high-quality products and superior technical expertise. Our goal is to forge long-term partnerships based on continuously delivering the lowest total cost of operations. ChemTreat's booth will feature unique approaches to reduce water consumption, improve product quality, enhance reliability of operating equipment and sustainable solutions for environmental compliance.

### **CID Associates Inc.**

[www.cidbuildings.com](http://www.cidbuildings.com)

CID Associates manufactures state-of-the-art, premier, modular liftable buildings for use as pulpits, power control rooms, electrical enclosures, crane and manipulator cabs, computer and clean rooms, comfort stations and offices. Multi-level units can be constructed for ultimate utilization of plant space. All are liftable from the top by crane or fork truck because of CID's protected cradle-and-crown indestructible construction. CID's Controls Division designs and manufactures electrical and pneumatic control panels and systems — from standard-type control panels to customized panels, motor control centers, switchgears, consoles, desks and workstations.

### **CIMM Group Co. Ltd.**

[www.cimmuk.com](http://www.cimmuk.com)

CIMM Group is a technology-based conglomerate professionally engaged in providing technology, engineering, manufacturing, trade and engineering/procurement/construction service in the ferrous and non-ferrous industry. For dozens of years, CIMM Group has been a top professional and reliable manufacturer and supplier of graphite electrodes, copper mold tube and plates, refractories, mill rolls, etc., for the iron and steel industry. With a large global sales network, our products have been exported to more than 40 countries and achieved a high reputation among customers. In order to keep up with the demanding market, CIMM has taken every effort to provide more cost-effective and considerate service to all its customers worldwide.

### **Cincinnati Thermal Spray Inc.**

[www.cts-inc.net](http://www.cts-inc.net)

Cincinnati Thermal Spray Inc. (CTS) is a pre-eminent provider of coatings, technology and solutions that protect and enhance products for a wide range of industrial uses. CTS is a service-based company with more than 30 years of industry knowledge and experience. We can help you improve the performance of your components

by selectively applying top-quality metal, ceramic and lubricating materials, including thermal spray coating, dry film lubricants, porcelain enamels, anti-corrosion paints and finishing of coatings. Our U.S. facilities serve customers worldwide and are located in Ohio, North Carolina, New Jersey and Texas. In addition, we can quickly mobilize our thermal spray processes on-site to apply coatings to your components that are too large to move or when scheduling will not permit delays.

### **Clean Water Technology Inc.**

[www.cleanwatertech.com](http://www.cleanwatertech.com)

Clean Water Technology Inc. (CWT), a global provider of water and wastewater solutions, specializes in industrial treatment and skid-mounted packaged treatment systems. CWT's innovative technology focuses on improving the water and wastewater industry by incorporating four important qualities: sustainability, efficiency, flexibility and easy operability. Inventors of the GEM System, an advanced flotation system. CWT's GEM System for primary treatment obsoletes any DAF. In secondary treatment, CWT offers a wide range of biological treatment systems including MBRs, UASB and EGSA Anaerobic Digesters and MBBRs. In tertiary treatment, CWT provides the full scope of filtration technologies, including nanofiltration, ultrafiltration, microfiltration and reverse osmosis.

### **CMI Heavy Industries**

[www.cmihi.com](http://www.cmihi.com)

Established in 1922, CMI Heavy Industries provides reliable products and solutions for all areas of steel-making. Our expertise lies in the manufacturing and refurbishment of large components and assemblies for coke ovens, blast furnaces, casters, hot strip mills and cold finishing mills. Products include: rolls and roll assemblies, chocks, interstand guide systems, gearboxes, gear couplings, main driveshafts and coiler mandrel components. Key processes include: proprietary twin-head submerged-arc overlaying, and robotic hardfacing



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### CMI Industry Americas Inc.

[www.cmigroupe.com](http://www.cmigroupe.com)

CMI Industry Americas Inc. was founded in 1923, originally known as the Electric Furnace Co. and then as CMI EFCO. We have been designing and manufacturing customized industrial heat treating equipment worldwide for more than 90 years. CMI Industry offers the best thermal solutions adapted for new capital investments or revamping/rebuilding existing furnaces to modern standards and safety regulations. CMI covers the primary needs of heat treating equipment of non-ferrous products, carbon steel, stainless steel and silicon steel processes. CMI Industry also offers spare parts, field service calls for troubleshooting and maintenance assistance, and engineering studies for process and/or quality improvements.

### Cobra Wire & Cable, a Division of EIS Inc.

[www.cobrawire.com](http://www.cobrawire.com)

Cobra Wire & Cable, a division of EIS Inc., offers a full line of industrial wire and cable, with same-day shipping available on most orders from our 10 distribution centers. In addition to dedicated customer service and project inventory, we offer firm pricing and logistic services to move your product at a reasonable cost. Technical expertise and specification assistance are always available. Call us direct at +1.216.416.0477. We look forward to working with you.

### Columbia Machine Works Inc.

[www.columbiamachineworks.com](http://www.columbiamachineworks.com)

Founded in 1927, Columbia Machine Works has served the steel industry with our unique design and manufacturing capabilities. Located in the heart of middle Tennessee, we have provided

our customers with services ranging from short-run product production to complete equipment rebuilds and turnkey project management. Our staff of engineers, fabricators, machinists and field service technicians, combined with our state-of-the-art facility, equipment and processes, give us an edge over our competition. We work directly with the end user to provide services and products you can trust. If you have a specific need, we can design a solution! Visit us at [www.columbiamachineworks.com](http://www.columbiamachineworks.com).

### Comesa Work Rolls

[www.comesa-it.com](http://www.comesa-it.com)

Comesa Srl is an Italian company with long experience and expertise in steel processing and heat treatment techniques, specializing in the manufacture of steel rolls and wear parts while providing a complete in-house production service. We produce rolls according to customers' drawings in different steel grades, heat treated to the specified depths, chromium plated if requested, and finish ground, ready to be placed on the machine. Our main products are:

- Rolls and backups for hot and cold heavy plate levelers.
- Leveling rolls.
- Flattening rolls for metal coils and sheets.
- Straightening rolls for rolled sections, pipes and tubes.

### Conductix-Wampfler

[www.conductix.us](http://www.conductix.us)

Conductix-Wampfler (formerly Insul-8 Corp. and Wampfler USA in the Americas) is a global leader in the design and manufacture of rugged, time-tested energy and data transmission systems for the mill industry. We specialize in custom-configured, motorized and spring-driven cable reels, conductor bar systems, heavy-duty festoon systems, energy-guiding chains and crane controls. Our decades of experience are applied to solving all your mobile electrification, regardless of environment and duty cycle. Our Hevi-Bar II conductor bar is available with proprietary anti-corrosion coating, "Dura-Coat." Our

Welded Cap Rail carries from 2,500 to 6,000 amps for very high-current situations.

### Continental Field Machining

[www.globalfield.net](http://www.globalfield.net)

For more than 30 years, Continental Field Machining has provided a complete range of on-site field machining, specialty welding services and valve repair throughout the world. Our union craft capabilities and 24-hour availability save our customers costly downtime, critical in today's intensive business environment. We will always respond quickly, efficiently and effectively. Our quality and service are number one and always a cut above the rest.

### Control Chief

[www.controlchief.com](http://www.controlchief.com)

For more than 40 years, Control Chief Corp. has been providing crane and locomotive industrial wireless remote control solutions to improve operations in various industrial applications in manufacturing, automation, crane, entertainment and railroad. By incorporating our cost-effective, safe and efficient industrial wireless radio remote control systems, your operation will provide an exceptional work environment to your employees. Systems range from simple functionality to high-level requirements. Control Chief Corp. also provides full training and support to ensure your industrial wireless remote control system delivers the superior performance you require long into the future. Find us at [www.controlchief.com](http://www.controlchief.com), and on LinkedIn, Facebook and Twitter.

### Cooling Tower Depot Inc.

[www.coolingtowerdepot.com](http://www.coolingtowerdepot.com)

Cooling Tower Depot® (CTD®) is a proven cooling tower supplier for field-erected mechanical draft cooling towers. Our years of experience and high level of expertise in cooling tower design, project management and construction provide our clients with innovative solutions while keeping cost and efficiency a priority. We are a leader in the custom design of fiberglass, wood and concrete cooling



towers, the repair and replacement of existing towers, thermal upgrades, inspections, disaster-recovery services, and we operate the largest cooling tower parts warehouse worldwide. CTD's website lets you price and design your new cooling towers in minutes with our optimization program. We are the DEPOT of all cooling towers.

### Corewire Ltd.

[www.corewire.com](http://www.corewire.com)

Corewire Ltd., established in 1976, is a leading manufacturer of alloy-cored welding wires. The welding consumables and machines are marketed under three different brands: Corewire, Weldclad and Forgeweld. All three brands are sold worldwide, and more than 80% of Corewire's clients are located overseas. Corewire's biggest client base is within the steel and allied industries. Over the years, we have developed excellent relationships with steel industry OEMs such as Siemens, Voestalpine, Danieli Corp., SMS Concast and SMS Siemag, as well as the world's major steel manufacturers. In 2008, Corewire achieved the status of preferred supplier for welding consumables to ArcelorMittal.

### Corrosion Fluid Products Corp.

[www.corrosionfluid.com](http://www.corrosionfluid.com)

Established in southeastern Michigan in 1968, Corrosion Fluid Products Corp. has grown throughout the greater Midwest and now operates 10 stocking branch operations. Our branch offices stretch from Davenport, Iowa, to Pittsburgh, Pa., and in every major metropolitan city in between. We offer the most recognized pumps, valves, piping and hose manufacturers in the industry for the chemical and fluid process markets. We also support what we sell, providing pump repair, valve automation assemblies, pipe fabrication, welded hose fabrications and skid-mounted pump systems. Our mechanics are factory certified and fully capable of handling any fabrication and repair. Corrosion Fluid Products is proud to be a veteran-owned company.

### CORTS Bearing Technology & Engineering

[www.corts.com](http://www.corts.com)

CORTS has been family-owned and -operated for more than 175 years, and is known for "Precision Made in Germany." Today we are a leading specialist for plant efficiency. Customers worldwide rely on CORTS for custom wear-resistant guiding surfaces and engineering services that put their plants in excellent working condition to improve their global competitiveness.

### CVS Technologies

[www.cvs.com.tr](http://www.cvs.com.tr)

Located in the industrial region of Gebze, just east of Istanbul, Turkey, close to many major ports, CVS provides plants and equipment for mini-mills. CVS covers the complete design and manufacturing activities for greenfield projects, as well as the revamp/upgrade of existing plants and equipment. In addition to technical assistance and consulting services, CVS manufactures spare parts and components for the steel sector. The CVS general plant design focuses on low production costs, high process flexibility and increasing productivity, while improving energy efficiency, improving the quality of the finished product, meeting environmental requirements at a minimum cost and better coordination of process/environmental requirements.

### D&S Hoist and Crane

[www.dshoistandcrane.com](http://www.dshoistandcrane.com)

D&S Hoist and Crane is a proud American manufacturer of overhead cranes and components. In addition to new crane sales, we inspect, repair, service and remanufacture all makes of overhead cranes. Our sister company, Magnetic Lifting Technologies (MLTUS), will also be attending AISTech 2015. MLTUS manufactures, inspects, services, repairs and remanufactures electro-lifting magnets and related components for the scrap, steel and slag industries. Both D&S and MLTUS are proud to offer a wide array of products that are made in America.

### Danieli

[www.danieli.com](http://www.danieli.com)

Danieli ranks among the three largest suppliers of plants and equipment to the metals industry worldwide. We are leaders in mini-mills, in long product casting and rolling plants, and among the front-runners in the flat product and iron ore sectors. Stop by our booth to learn about Danieli.

### Datapaq

[www.datapaq.com](http://www.datapaq.com)

Datapaq® is a leader in the design and manufacture of temperature profiling systems renowned for reliability, accuracy and rugged design to withstand the harshest environments found in hostile heat treatment processes. In high-temperature metal heat treatment industries, getting the exact temperature of the product and its environment is critical. Temperature profiling can also help eliminate costly rework or rejects, and maximize product throughput while minimizing costs. Controlling your furnace is critical to the product quality your customers demand. For more than 20 years, Datapaq has been the product of choice for temperature surveying equipment and analysis software. To discuss your application needs, visit our booth.

### Delta USA

[www.deltasensor.eu](http://www.deltasensor.eu)

Delta provides a wide range of high-performance sensors and measurement systems for continuous casters, hot rolling mills, processing lines and other extreme applications. Several working models will be on display: the XD stereoscopic width gauge for hot strip, plate and processing mills; the FT 4200 laser distance meter for measurement in the harshest environments; and the DC 3000 scanning hot metal detector, as well as our IRIS hot metal detector for detection in harsh environments. Our TS loop scanners offer reliability and repeatability for customers who need loop control and strip tracking. The V5 laser barrier for detection of hot or cold products survives where other sensors fail. The Z6H fiber-optic head gets into tight areas that need detection.

**DESHAZO LLC**[www.deshazo.com](http://www.deshazo.com)

DESHAZO is a leading original equipment manufacturer of overhead cranes and automation systems in the United States. With more than 20,000 overhead cranes in operation worldwide, DESHAZO provides “elevated thinking” for the material handling industry. We design, manufacture and install single-girder, doublegirder, fully-gantry, and semi-gantry cranes from light industrial to CMAA class-F mill-duty service. DESHAZO’s Service group provides 24/7/365 crane maintenance, repairs, inspections, surveys, rebuilds, modernizations, and OEM replacement parts to all overhead crane and hoist makes and models. DESHAZO’s Automation group can design, build, and install one work cell or a complete automation system in your facility to meet your needs.

**Deublin Co.**[www.deublin.com](http://www.deublin.com)

Deublin Co. has been a leading supplier of rotary unions for continuous casting machines for 50 years. Deublin products feature balanced mechanical seals for low friction, low wear and long service life. New bearingless rotary unions eliminate the negative effect of side loading by hose. Bearingless rotary unions can be incorporated into the machine with OEMs at the front end or retrofitted with adaptive hardware at the mill level. In addition, Deublin manufactures a full range of rotary unions for heating, cooling or transmission of fluid power into rotating machinery. Visit us to see and discuss Deublin solutions for all your rotary union applications.

**Dialight**[www.dialight.com](http://www.dialight.com)

Dialight defines the current state of LED lighting technology with innovations in light output, efficacy and reliability for our complete line of lighting fixtures designed for industrial, commercial, hazardous location, transportation and public infrastructure applications. These results are directly related to our commitment

to advancing solid-state lighting products that reduce maintenance, improve safety, ease disposal and are more environmentally friendly. With our high-specification range of products, we are uniquely positioned for a number of long-term global growth trends. Dialight plc is headquartered in the U.K. and operates out of the U.S. with offices in the U.S., U.K., Denmark, Germany and Mexico.

**Diamond Power International Inc.**[www.diamondpower.com](http://www.diamondpower.com)

Diamond Power Controls & Diagnostics (formerly Diamond Electronics) is a Diamond Power International Inc. company located in Lancaster, Ohio. The company supplies high-temperature, closed-circuit television (CCTV) camera systems and related products in the United States and throughout the world. Diamond Power is a recognized innovator in diagnostic and vision systems for the iron and steel industries, designing, manufacturing, marketing and servicing industrial CCTV and related products for use in security, surveillance, diagnostics and industrial process viewing.

**Dixon Specialty Products**[www.dixonvalve.com](http://www.dixonvalve.com)

Dixon, founded in 1916, is a premier manufacturer and supplier of hose couplings, valves, dry disconnects, swivels, and other fluid transfer and control products. The company’s global reach includes a wide range of products for numerous industries, including petroleum exploration, refining, transportation, chemical processing, food and beverage, steel, fire protection, construction, mining and manufacturing. Dixon’s strategic objective is to create solutions that make products safer, leak-free, longer lasting and always available.

**DLZ Industrial Surveying**[www.dlz.com](http://www.dlz.com)

For more than 60 years, DLZ Industrial’s focus has been to safely provide high-quality services using

the right equipment to help solve our clients’ problems. Services include:

- Laser alignment and precision surveying.
- High-definition 3D scanning.
- Precision optical tooling.
- Professional surveying.
- Hydrographic surveying.
- Construction layout.
- Material testing.
- Geotechnical and environmental drilling and investigations.

With a staff of more than 550 employees and hundreds of industrial projects completed each year, we have the knowledge and experience to meet our clients’ problems head-on and be a part of the solution. Safety focused, team focused, service focused. Problem solved — everybody happy.

**Doerrenberg Edelstahl GmbH**[www.doerrenberg.de](http://www.doerrenberg.de)

Steel has been our passion for more than 150 years. Dörrenberg offers solutions for special steel, special steel casting, investment casting and surface technology. Core products are wear-resistant tool steel rolls for tube production, straightening machines and special shaping rolls for various applications. Our rolls stand out for high accuracy, high wear resistance and excellent toughness. Our customers benefit from superb material properties resulting in an optimum cost-performance ratio due to long service life. Dörrenberg rolls are made in Germany and can be realized in nearly all sizes and for virtually every type of installation.

**Dover Hydraulics Inc.**[www.doverhydraulics.com](http://www.doverhydraulics.com)

We repair cylinders (including AGC and oscillation), pumps, motors and valves. We also have full engineering, field service and fabrication departments. What type of hydraulic problems do you have? Critical cylinders? Large pumps? Hydraulic circuit issues? Make these worries go away. Stop and talk to us. We can help solve problems in your mill. Dover Hydraulics is a comprehensive resource for all of your hydraulic service needs.





### Drafto Corp.

[www.drafto.com](http://www.drafto.com)

Drafto Corp. will feature the following at AISTech 2015: rotating coil lifters to handle coils (with coil edge damage prevention and electronic sensing), narrow aisle coil lifters, patented Coil Guard edge protector modules, crane scale weighing systems with remote (RF) or direct-readout interfacing to customer computer systems, hot metal weighing in upper sheave nest (overhead crane), "Rotahook" (rotating motorized hook blocks) crane scale systems, sheet lifters, slab tongs, "Autolatch" (remote-controlled, patented gravity latch), replacement hook blocks, sheaves, hoist rope drums and laminated ladle hooks.

### Drivecon

[www.drivecon.com](http://www.drivecon.com)

Established in 1981, we have focused on designing and manufacturing turnkey control solutions for the overhead crane industry for more than 30 years. We have the products, technology, and people to design and support engineered crane control packages for any crane make. Stop by our booth to view our products and talk with our people about any application you have. We aim to impress.

### DropsA USA Inc.

[www.dropsa.com](http://www.dropsa.com)

DropsA was founded in 1946 and has become a leading producer of oil and grease systems, recirculating oil systems, and air/oil lubrication systems and components. The company offers an extensive range of solutions for the most diverse lubrication applications

found in the steel industry, as well as machine tool, printing, pulp and paper, energy, mobile lube and other industry sectors. Continuous investment in R&D, along with advanced design and production technology, makes DropsA a leader in new product development. The DropsA booth will feature the latest SUMO grease lubrication pump and DM X-Over interchange dual-line modular feeders, as well as a sampling of other steel mill-targeted pumps and devices for lubrication applications.

### Duff-Norton

[www.duffnorton.com](http://www.duffnorton.com)

Duff-Norton manufactures screw jacks, linear actuators, electric cylinders, rotary unions, acme and ball screws for the industrial market. Since our beginning in 1883, Duff-Norton has earned a reputation for reliable,

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high-quality products meeting the industrial lifting, positioning and heat transfer needs of our customers worldwide. Our time-proven screw jacks have been used in steel mills for years as a means for roll adjustment and forming applications. Our rotary union products are used to cool continuous casters and tunnel furnaces of all shapes and sizes. Every member of the Duff-Norton team is dedicated to customer service excellence. Made in the USA.

### Duraloy Technologies

[www.duraloy.com](http://www.duraloy.com)

Duraloy manufactures high-temperature furnace components that offer extended, trouble-free service and exceptional energy savings. MORE-2150 was developed specifically for tunnel furnace roll applications, and features high creep strength with exceptional oxidation resistance and surface stability so as to allow dry roll operation at temperatures exceeding 2,200°F. Since the introduction of MORE-2150 in the mid-2000s, Duraloy has sold more than 4,000 dry, non-water-cooled rolls as replacements for water-cooled ones. Collectively, it is estimated that all of the Duraloy dry rolls in service worldwide save the equivalent amount of natural gas to supply the residential needs of a city of almost 500,000 each year. Our customers save millions of dollars in natural gas costs each year, while enjoying the trouble-free service of dry rolls.

### EAFab

[www.eafabcorp.com](http://www.eafabcorp.com)

Headquartered in the heart of the steel industry — Pittsburgh, Pa. — our experienced technical staff provides efficient, cost-effective solutions that meet or exceed your most demanding requirements. EAFab strives to ensure personalized service and rigorous quality control for steel production clients. We have developed state-of-the-art tap gate assemblies that are reliable and maintenance friendly. EAFab has just introduced the patent-pending Gator Mouth technologies for your ladle furnace application

to allow your ladle furnace roof to remain in a fixed position, minimizing the need for heavy lift hydraulics and improved evacuation and alloy control. Our investments in engineering software allow us to provide complete engineering support from 3D modeling and full FEA with static and dynamic capabilities.

### Ebner Furnaces Inc.

[www.ebner.cc](http://www.ebner.cc)

Ebner is a leading manufacturer of heat treatment facilities for the steel, copper and aluminum semi-finished products industries worldwide. We manufacture continuous and batch-type furnaces delivering maximum performance and optimum anneal results. Ebner facilities are economical, have a low impact on the environment and are easy to operate. We provide complete heat treatment solutions, from furnaces to process automation systems. Some product forms processed with Ebner equipment include wire, tubing, strip and coils. Our HICON H<sub>2</sub><sup>®</sup> rapid atmosphere cooling systems provide continuous processing of AHSS for the automotive industry, as well as batch anneal facilities, reducing processing time with exceptionally clean end products.

### Edwards Vacuum

[www.edwardsvacuum.com](http://www.edwardsvacuum.com)

Edwards dry mechanical vacuum systems will provide huge economic and environmental benefits for your refining station when compared to traditional steam ejectors, with energy costs reduced by more than 90%. Our experience and know-how in providing vacuum solutions for VD, VOD and RH processes have given Edwards products a reputation for reliability and robustness in the harsh steelmaking environment. Whatever your process needs, you can rely on Edwards to provide innovative vacuum solutions to enhance your productivity.

### Elettrotek Kabel North America Inc.

[www.elettrotekkabel.com](http://www.elettrotekkabel.com)

Flexibility has always been the key strength of our company. We pride ourselves on offering reliable, high-quality service. Having a relationship with our customers, combined with a strong technical knowledge of the product we offer, is a crucial point in the way we operate on the market. Our longstanding experience is at our customers' disposal to find solutions to all construction requirements in many fields and applications. Customer loyalty is the ultimate proof that our products and service are top quality. The strong commitment to customer satisfaction and to continuous improvement of product and service quality has afforded Elettrotek steady growth over the years.

### eMeasurementics

[www.emasurementics.com](http://www.emasurementics.com)

eMeasurementics provides automatic material tracking and warehouse/yard management solutions for handling slabs, coils, sheets/plates and long products. Our advanced WMS software (warehouse management system) along with state-of-the-art Crane+Vehicle Positioning & Navigation system ensures 100% tracking of inventory without any manual inputs. Key benefits include elimination/reduction of manual intervention for maintaining inventory and locating material, improved efficiency for cranes and vehicles, elimination of lost/misplaced inventory, 100% in-time delivery, elimination of production delays and improvement of yard operations. Our engineering team will be available at our booth to discuss your needs and present a possible solution.

### EMG USA Inc.

[www.emg-automation.com](http://www.emg-automation.com)

EMG USA Inc., Warren, Ohio, is the North American subsidiary of EMG Automation GmbH, Wenden, Germany. EMG personnel will be available to discuss any needs you may have in the area of strip guiding

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**KOP-FLEX**  
**ROLLWAY**

KOP-FLEX® and ROLLWAY® have been providing high quality couplings and engineered roller bearing products for decades. The worldwide leader in coupling design, manufacturing and service, with a global network of centers and personnel, Kop-Flex can handle any coupling, anytime, anywhere in the world. And whether you are looking for a bearing for your castor segment or a bearing for use on your rolling mill, Rollway is able to offer an interchange product or a complete new design to help keep your mill running smoothly.

 @MetalsSolutions  PowerTransmissionSolutions | [PowerTransmissionSolutions.com/Metals](http://PowerTransmissionSolutions.com/Metals)

systems and quality assurance systems. As a leader in technology advancements in both of these areas, we will be glad to discuss any pertinent applications with you.

### EMPCO

[www.empcocom](http://www.empcocom)

As a major supplier of EAFs and ancillary electrometallurgical equipment to steelmakers worldwide, we recognize viable concepts and make them reality:

- SIOS™ Simplified Iron Ore to Steel process used directly in the EAF with pellet technology.
- AUTO-REACT™ electrode arms with automatic impedance control.
- UNIGATE™/CAMI™ energy-saving slag door sealing.
- SCORPIO™ temperature and sampling device throughwall panel.
- SSR™ Self-Supporting Roof — no “spider” required.
- UNILANCE™ 40-MW burner/lance.
- CuRe™ (copper)/FeRe™ (steel) energy-saving, long-lasting panels.
- OMNIVALVE™ automatic panel temperature control, increasing panel life.
- INCONEL ducts that last five times longer than conventional ducts.

We believe you could not choose a better supplier or more reliable partner for your facilities than EMPCO.

### EMSCO Inc.

[www.emsco.com](http://www.emsco.com)

EMSCO Inc. is an Inductotherm Group company that offers complete service for all induction furnaces either in our shop or at your location. The company stocks a comprehensive inventory of aftermarket parts and can manufacture custom water-cooled power leads for any application. EMSCO also engineers and builds an extensive range of process cooling equipment tailored to the requirements of your heat producing processes, featuring HyprCool®, an advanced adiabatic heat rejection system. EMSCO's construction and installations division can professionally install your new system with

minimal disruption to your production schedule. Tomorrow's solution... today!

### Enertechnix Inc.

[www.enertechnix.com](http://www.enertechnix.com)

Enertechnix's high-performance infrared (IR) cameras and patented technology deliver new visibility into key steelmaking processes, helping to improve safety, efficiency and product quality. Enertechnix IR cameras make it possible to achieve visibility inside and around your blast furnace, BOF, EAF, LMF, degasser, transfer operations, casting, secondary cooling, reheat and annealing furnaces during operational conditions. Founded in 1995, Enertechnix has a successful track record supporting industries that use high-temperature processes. Visit us online at [www.enertechnix.com](http://www.enertechnix.com) or call +1.330.573.8998 for more information.

### Enprotech

[www.enprosteel.com](http://www.enprosteel.com)

Enprotech provides a wide range of services, including the manufacture and repair of steelmaking equipment, flow control systems, engineering, on-site maintenance and machining. Enprotech is a leading provider of press equipment. Offering new and repair solutions for stamping, forging and molding applications. New Metal Engineering, a joint venture between Enprotech and IHI, provides customers with local support while utilizing global resources.

### Ergolines Lab srl

[www.ergolines.it](http://www.ergolines.it)

Ergolines produces a range of products for the continuous casting of steel, including EMS systems, sensors, electric machines and sophisticated automatic process control devices, all designed to achieve the highest steel quality. Ergolines is among the few EMS manufacturers and exports its systems worldwide. Ergolines' philosophy is that each project is designed to guarantee maximum flexibility and efficiency and satisfy specific engineering requirements. Alongside

stirrers, the product range includes mold level control sensors, breakout prediction systems, mold oscillation monitoring sensors, ladle-to-tundish slag carryover sensors and others. Ergolines boasts valuable relationships with leading engineering companies and steel producers worldwide, including Siemens VAI and ArcelorMittal.

### ERIEZ

[www.eriez.com](http://www.eriez.com)

Stop by to learn about ERIEZ's line of rugged permanent magnetic pulleys and drums, suspended electromagnetic and permanent magnetic separators and broad array of vibratory feeders and conveyors — all designed to operate in even the harshest environments. Although all ERIEZ equipment is built to last, ERIEZ's five-star service program is available to keep your equipment operating in top condition.

### ESM Group Inc.

[www.esmgroupinc.com](http://www.esmgroupinc.com)

For more than half a century, ESM Group Inc. has supplied desulfurizing reagents, fluxing materials, synthetic slags and ladle insulators to the world's steelmakers. This has been accomplished using in-house, state-of-the-art pneumatic injection, skimming, and bulk handling equipment designed and operated by people with unparalleled technical knowledge and proven hands-on experience. To ensure the best desulfurization practice, every component of ESM's desulfurizing process solution is based on the practical operational experience of ESM's highly skilled in-house team of engineers, software programmers, metallurgical and service support personnel. ESM is fully supported by the expertise and resources of SKW-Metallurgie Holding AG. Visit our booth to discuss how we can be of service to you.

### ETA Engineering Inc.

[www.etaapc.com](http://www.etaapc.com)

From concept to compliance, ETA Engineering is a design-build manufacturer of air pollution control and



heat recuperation systems for the iron and steel industry. Celebrating our 33rd year, employee-owned ETA has a full discipline of engineers providing complete turnkey systems. Fabricated in our own facilities, the ETA 2000 baghouse dust collector is being used on a wide variety of iron and steel applications, including electric/submerged arc furnaces, cupola melting operations and inoculation systems. The ETA 2000 includes a performance guarantee and an expected filter life exceeding six years in the majority of applications.

### ETS/Evertz Technology Service

[www.ets-usa.com](http://www.ets-usa.com)

With more than 50 years of industry experience and over 240 registered patents, the Evertz Group is a leading provider of specialized products and services for the iron and steel industries. Since 2002, Evertz Technology Service USA's Grinding Division has processed more than 1.3 million tons of ferritic, austenitic and martensitic stainless steel for AK Steel. In 2011, product capability was expanded to include high-strength, low-alloy carbon steel and corrosion-resistant, high-temperature alloys. Equipment to process rounds was added in 2012. In 2008, ETS USA opened its Copper Division, which now refurbishes used copper plates to the specifications of both conventional and compact strip continuous casters. For further information, visit [www.evertz-group.com](http://www.evertz-group.com) or [www.ets-usa.com](http://www.ets-usa.com).

### Exactration LLC

[www.exactration.com](http://www.exactration.com)

Exactration is a manufacturer of fluid filtration and fluid handling systems for iron and steel producers. Our core products are three styles of magnetic separators used on roll coolant, cleaning sections and roll grinding applications. The High Standard is an industry standard for bar mag separators, the Revolver utilizes a revolving bar cleaning mechanism and the patented Magnum automation takes the bar mag separator to the next level. Exactration also supplies staged

oil water separators and all styles of bag filters and housings. Our services include equipment evaluation, engineered system design and spare parts/repair services of existing magnetic separator systems.

### EVERLOY Shoji Co. Ltd.

[www.everloy-spray-nozzles.com/en](http://www.everloy-spray-nozzles.com/en)

EVERLOY is a leading supplier of descale nozzle technology for hot strip mills. With the addition of the tungsten carbide division, EVERLOY offers more flowrates and spray angles than any of its competitors. Because of our combined capabilities and technologies, we consistently deliver the highest impact and erosion rates. EVERLOY also offers the most uniform air mist nozzles for continuous casters, CSPs and strip casters with the highest turndown ratio of any spray nozzle supplier. EVERLOY engineers in Japan have advanced air-mist nozzle technology to the highest level, leading to its acceptance by leading steelmakers around the world. We will exhibit our spray nozzle technology and have engineers available to discuss your application needs.

### EXO Technologies LLC

[www.exosteel.com](http://www.exosteel.com)

Founded in 1998, EXO Technologies has a global presence in ferrous and non-ferrous metals-producing plants. From concept to solution, EXO offers the following systems for increased productivity and reduced accident exposure:

- Industry-leading Robo-Torque Electrode Addition System torques electrodes on the EAF/LRF.
- With Columbia Machine Works, we offer hydraulic torque stations and below-the-hook lifting devices.
- Our Robo-Test Auto Steel Test System provides molten metal testing in EAFs, ladles and tundishes.
- Complete combustion and gas/solids injection packages for EAFs.

Visit our website at [www.exosteel.com](http://www.exosteel.com), and we hope to see you at AISTech 2015!

### Falk PLI

[www.falk-pli.com](http://www.falk-pli.com)

Falk PLI, an innovative engineering firm recognized for our precision measurement practices and analysis, continues to redefine the standards for industrial metrology in the metals industry. What differentiates Falk PLI is our unmatched experience, capabilities and unique applications of the technology. From major capital projects to improving routine maintenance, we have built our reputation on helping our clients reduce downtime and improve reliability. Technology in the hands of the right people produces extraordinary results. Stop by our booth and let one of our project managers show you why Falk PLI is the measurement company of choice. Innovative solutions. Measureable results. We are Falk PLI.

### Fedmet, Diamond Graphite, TKE

[www.fedmet.com](http://www.fedmet.com)

Fedmet provides quality engineered products and services for your high-temperature applications. We supply refractories, electrodes and high-temperature burners for the steel and metals industries. Fedmet refractory bricks include mag-carbon, AMC, alumina, mag-chrome and dolomite bricks. Other refractories include blast furnace, taphole clay, tapholes, slidegates, plugs and EAF bottom hot patch materials. Our Diamond Graphite electrode products are available in a wide variety of diameters for EAF and LMF applications. FedmetTKE has introduced a revolutionary ultrahigh-performance burner system called the TKEnergizer. For more than 20 years, we have delivered solutions that increase reliability, improve safety and contribute to a superior product.

### Ferrum International LLC

Ferrum International LLC supplies molten metal additives to the foundry and steel industry. We focus on slag management for clean steel technology. Ceramic fiber insulation complements our high-temperature product

line. We have incorporated ceramic spun fiber with a proprietary process to increase product performance and handling. Visit our booth for more details.

### Filtertech

[www.filtertech.com](http://www.filtertech.com)

Filtertech manufactures engineered industrial coolant filtration systems used on hot and cold rolling mills, temper mills and roll grinders that use either a straight oil or water-soluble coolant as the lubricant. Filtration equipment includes flatbed air vacuum filters, liquid vacuum filters, deep-bed gravity filters, pressure filters, absorption filters, centrifuges and magnetic separators. Filtertech also supplies environmental waste treatment systems for the disposal and treatment of wastewater-soluble coolants and roll oils. Treatment equipment includes dry chemistry equipment, vacuum distillation units, wastewater evaporators, oil-water coalescing separators, oil skimmers, water softeners and activated carbon filters.

### Finzer Roller

[www.finzerroller.com](http://www.finzerroller.com)

Since 1968, Finzer Roller has supplied steel mills with quality, competitively priced products such as wringer, steering, sink, pinch, hold-down, bridle, deflector, snubber, tension, tracking, dunking, idler, coating, guide, coiler, carrier, turn-down, and seal rollers. We provide Polyester and Polyether formulations ranging from 5A to 80 shore D. Specialized steel components such as urethane coil pads, fork truck pads, expanding rubber mandrels, acid-resistant coatings, elastomer bearing components, urethane crane pads, rubber/urethane slitter rings, and custom elastomer engineered parts are available. Services include core inspection and repair, design assistance, new core manufacturing and dynamic balancing. For more information, email [sales@finzerroller.com](mailto:sales@finzerroller.com).

### Fives

[www.fivesgroup.com](http://www.fivesgroup.com)

Fives is an international engineering group that designs and supplies machines, process equipment and production lines. Fives provides innovative and highly efficient technical solutions for the steel industry, covering carbon, stainless and silicon sectors in flat, long product, tube and pipe, and rolling and strip processing. Fives' global offer includes reheating furnaces, cold rolling mills and processing lines. Fives also offers metallurgical assistance, design, manufacture, and retrofit of mechanical, thermal and finishing equipment; on-site assistance; auditing; technical consulting and downstream client support. Fives develops technologies that bring additional value to customers to optimize OPEX, enhance performance, gain operational flexibility, achieve ultimate quality and improve energy savings.

- **Fives Bronx**

**Tube and Pipe Mills and Finishing Equipment**

Fives is a prominent supplier of OTO and Abbey mills, Taylor-Wilson finishing equipment and Bronx straighteners, providing custom-engineered products that offer a quality, fully integrated solution. This combination of resources and infrastructure delivers reliable tube and pipe mill and finishing solutions for a wide range of seamless and welded products. Installations include Bronx tube and pipe and long product straighteners, Taylor-Wilson hydrostatic pipe testing, collapse testing and leak testing machines, and a complete line of end-facing and rotary cutoff equipment. Fives' OTO and Abbey mill offer features the best in ERW pipe mills, entry systems, tube and pipe cutoffs, and Abbey slitting lines and drawbenches.

- **Fives Celes**

**Induction Heating**

Fives designs and manufactures a full set of induction heating and industrial cooling equipment and solutions for many industries. The group has also developed a unique new high-flux magnetic induction

technology, Celes CELINE LP (long product) and CELINE FP (flat product); as well as the EcoTransFlux™, a high-power Transverse Flux Induction Heating (TFIH) technology that can be implemented on steel processing lines to increase the metallurgical properties of the steel grade, reduce greenhouse gas emissions and acid waste, while meeting quality, economic and capacity criteria.

- **Fives DMS**

**Mechanical Equipment**

Thanks to the development of its own technologies and to its proven experience to manage turnkey contracts, Fives supplies complete tailor-made projects integrating innovative and efficient equipment sold under the legacy DMS name for cold rolling mills, processing lines and a range of expert services. Product line and services include: DMS 20-cylinder cold rolling mills, steel processing lines, DMS skinpass mills and terminal mechanical equipment.

- **Fives Keods**

**Technical Assistance**

Fives offers a wide range of technical support, consulting and software tools for steelmakers. The offer covers new line ramp-up assistance, laboratory upgrades, early grades (mild, BH, HSLA, etc.), assistance in production of AHSS, UHSS (DP, TRIP, FB, boron steel, etc.), troubleshooting assistance, quality management, R&D and process strategy, training and courses. Specifically, Fives' expertise includes surface inspection for the production of coils for the automotive industry, automotive steel market analysis and assistance in obtaining approval by carmakers.

- **Fives North American Combustion Inc.**

**Combustion Solutions**

Fives is a single-source supplier for new systems furnaces and retrofits, providing innovative, turnkey solutions for thermal processing needs. From furnace design to field testing, process, combustion, construction, and controls engineering are



# QUALITY

BRONX SIX ROLL STRAIGHTENER, ENSURES THE ABSOLUTE QUALITY OF YOUR TUBES AND PIPES

The Bronx Six Roll Straightener features a unique design that allows for enhanced efficiency, superior quality and safety. Through their experience and technical knowledge, our engineers have worked to create machines that you can rely on for minimized set-up time, improved accuracy without surface blemishes, enhanced rigidity and consistency in straightness/roundness. Engineered for safety, the Bronx Six Roll Straightener's drives are located in the back of the machine and the machine's operator has a complete view of the straightening process from the operating console. Quality, service, and reliability ; Trust Fives.

[fivesbronx-sales@fivesgroup.com](mailto:fivesbronx-sales@fivesgroup.com)



**fives** ultimate machines  
ultimate factory

all available as a single package. Fives offers application-specific combustion systems, including regenerative (direct and radiant tube) oxy-fuel systems, recuperative and ambient air, low-emissions systems. Together with advanced controls and engineered packaged systems, Fives can satisfy today's demanding needs for improved furnace production, fuel savings and reduction in greenhouse gases.

- **Fives North American Construction Services Ltd.**

#### Thermal Solutions

Fives supplies the iron and steel industries with thermal solutions. It expertly engineers and manufactures state-of-the-art furnaces, heaters and equipment used in the manufacture and the forming of iron and steel sold under the legacy name of North American. Recent projects include coil annealers, ladle and tundish heaters, reheat furnaces, catenary strip coating furnaces and cupola melt facilities. Fives supplies complete turnkey installations and works with its customers to manage the best team for a project. Its maintenance group furnishes the personnel along with the equipment and materials to perform work on an emergency basis or as ongoing maintenance and rebuilds.

- **Fives OTO SpA**

#### Tube and Pipe Mills and Finishing Equipment

Fives is a prominent supplier of OTO and Abbey mills, Taylor-Wilson finishing equipment and Bronx straighteners, providing custom-engineered products that offer a quality, fully integrated solution. Recognized for experience and superior technology by steel and non-ferrous manufacturers, thousands of installations are commercially present throughout the world, such as OTO and Abbey mills that feature the best in ERW pipe mills, entry systems, tube and pipe cutoffs, and Abbey slitting lines and drawbenches. Fives' installations also include Bronx

tube and pipe and long product straighteners, Taylor-Wilson hydrostatic pipe testing, collapse testing and leak testing machines and a complete line of end-facing and rotary cutoff equipment.

- **Fives ST Corp.**

#### Surface Treatment Equipment

Fives specializes in the design and supply of surface treatment equipment using various chemical treatment processes for carbon and stainless steels. In addition to stand-alone systems, Fives offers sub-systems as well as a dedicated range of surface treatment products such as: continuous pickling lines for carbon and stainless steel strip, batch pickling lines for carbon and stainless steel wire, tube and bar and degreasing sections for CAPL, bright annealing lines, continuous galvanizing lines, silicon steel decarburization lines and continuous annealing lines.

- **Fives ST Furnace Div.**

#### Thermal Equipment

Fives designs and supplies thermal equipment for the world's leading steel suppliers. Fives offers a full range of thermal equipment which include: reheating furnaces (Stein Digit@1 Furnace® range), plate treatment lines, heat treatment furnaces including equipment for the pipe and tube industry, vertical furnaces and cooling systems for galvanizing and annealing lines (Stein Prium®, Stein Digiflex®, FlashCooling®, AdvanTek® combustion system), as well as laboratory test benches for strip processing.

- **Fives Stein Inc.**

#### Thermal Equipment

Fives designs and supplies thermal equipment for the world's leading steel suppliers. Fives offers a full range of thermal equipment which include: reheating furnaces (Stein Digit@1 Furnace® range), plate treatment lines, heat treatment furnaces including equipment for the pipe and tube industry, vertical furnaces and cooling systems for galvanizing and annealing lines (Stein Prium®, Stein Digiflex®, FlashCooling®,

AdvanTek® combustion system), as well as laboratory test benches for strip processing.

## Flame Tech

[www.flametechnologies.com](http://www.flametechnologies.com)

Flame Tech will feature the Scorpion® industrial line of steel mill cutting products: caster cutoff torches, along with lightweight, heavy-duty emergency cutoff and scrap cutting torches utilizing safe tip-mix technology. See our cost-saving Gas Mizer manifolds and auto-ignition drop stations, swing-away torch holders complete with quick-connects, high-flow flashback arrestors and in-line filters. We'll have our new Inferno®-X line of exothermic products, along with Victor®-style heavy-duty maintenance kits and our revolutionary Lightning Rod® hollow-core gouging rods/torches. Flame Technologies provides complete cost-reduction programs for your caster operation and on-site safety programs. Flame Tech will also feature our new industrial-grade Hydro-Mist™ cooling fans.

## FLANDERS

[www.flandersinc.com](http://www.flandersinc.com)

FLANDERS manufactures and repairs large electric motors, power systems and aftermarket products, and engineers systems integration and automation solutions for metals, mining, power utilities, alternative energy and other heavy industries. The privately owned, third-generation company, headquartered in Evansville, Ind., maintains global operations in Canada, South America, Africa and Australia, with more than 800 employees and almost 1 million square feet of shop, office and inventory space. FLANDERS strives to be a force for good — serving customers, co-workers and communities with a commitment to excellence. Find out more at [www.flanderselectric.com](http://www.flanderselectric.com).

## Flow In Motion

[www.flowinmotion.com](http://www.flowinmotion.com)

Proud representatives of Foley Material Handling crane components, FrigorTec cab air conditioners,





Merford Cabs and ergo seats and Woelfer custom AC motors.

### **FLSmidth Inc. – AFT Division**

[www.flsmidth.com/aft](http://www.flsmidth.com/aft)

FLSmidth AFT is a major manufacturer and supplier of baghouse filter bags, APC replacement parts and baghouse services to most every industry. AFT is highly regarded for the quality and performance of its products to many baghouse OEMs as well as countless individual production facilities. Our highly experienced engineering and technical service team provides complete bag installations, changeouts and dust collector rebuilds to ensure minimum downtime and long-term, trouble-free operation.

### **Freudenberg-NOK Sealing Technologies**

[www.fnst.com](http://www.fnst.com)

Freudenberg-NOK Sealing Technologies is the Americas joint venture between Freudenberg & Co. in Germany and NOK Corp. in Japan. Freudenberg-NOK is a leading producer of advanced sealing technologies for a variety of markets — including aerospace, agriculture, appliance, automotive, construction, diesel engine, energy, food and beverage, and pharmaceutical — with a strong focus on heavy industry and its steel mill applications. Founded in 1989 under the legal name Freudenberg-NOK General Partnership, Freudenberg-NOK is headquartered in Plymouth, Mich., and operates more than 20 facilities across the Americas. For more information, visit [www.fnst.com](http://www.fnst.com).

### **FrigorTec LP**

[www.frigortecamericas.com](http://www.frigortecamericas.com)

FrigorTec is one of the main quality suppliers for severe-duty air-conditioning and filtration units worldwide. For more than 50 years, FrigorTec has developed, manufactured and supplied reliable refrigeration units in copper and steel industries, smelting foundries, coke facilities, mining, oil and gas, pulp and paper, chemical processing plants, cement plants, aluminum production, offshore, container terminals, crane cabs, the

agricultural industry, breweries, food production, the plastics industry, electronics and much more. Our large service and sales network in more than 100 countries and our long experience in the iron and steel industry provide optimal consulting and after-sales service for our customers.

### **FTI Flow Technology Inc.**

[www.ftimeters.com](http://www.ftimeters.com)

Regardless of the flow measurement, Flow Technology has the answer because steel mill applications are anything but “run of the mill.” Our line of robust, reliable flowmeters are used for critical liquid and gas flow measurements throughout the steel industry.

- Electromagnetic technology for conductive fluids.
- Turbine technology for liquid and gas applications where compact size and high turndown are desired.
- Positive displacement for medium- to high-viscosity fluids and when space is limited, as no straight run is required.

Flow Technology has more than 50 years of experience in applying the right flowmeter for your application.

### **Fuchs Lubricants Co.**

[www.fuchs.com](http://www.fuchs.com)

Fuchs Lubricants Co. is an independent lubricant manufacturer. Our Steel Mill Division focuses on grease, gear, hydraulic and Morg oils, as well as automotive OEM globally approved mill oils. We will present the technical advantages that our mill products offer and why they merit your consideration. We welcome your visit to our booth.

### **G.W. Becker Inc.**

[www.gwbcrane.com](http://www.gwbcrane.com)

Since 1980, G.W. Becker Inc. has offered a full spectrum of overhead crane-related products and services, including: manufacturing of custom overhead cranes to CMAA specifications or AIST *Technical Report No. 6*, assembly of packaged crane equipment, workstations, jibs, hoists, OSHA and maintenance inspections with

preventive maintenance, field service and repair, component rebuilds, operator and maintenance training, runway surveys and inspections, engineering analysis, design engineering, modernizations, automation control and integration, and turnkey installation, as well as parts distribution. G.W. Becker Inc. provides specialized expertise and long-term planning solutions for the unique challenges of maintaining overhead crane equipment.

### **GAI-Tronics**

[www.gai-tronics.com](http://www.gai-tronics.com)

Founded in 1946, GAI-Tronics® is the world's largest company focused on the communication needs of the world's industrial markets. GAI-Tronics products set the industry standard for durability and reliability. While maintaining our commitment to the principles of quality and customer service, GAI-Tronics aggressively applies leading-edge technology to solve the world's most challenging communication needs.

### **Gantrex Inc.**

[www.Gantrex.com](http://www.Gantrex.com)

Gantrex Inc., based in Pittsburgh, Pa., is the Americas office of Gantrex SA, a leader in heavy-duty crane and runway systems. Gantrex-engineered adjustable crane rail clips, steel-reinforced crane rail pad and flexible crane girder tiebacks have become world standards for important crane runways, such as those found in steel mill process applications. Gantrex also offers a complete line of advanced hydraulic crane bumpers. Gantrex performs flash butt and thermal rail welding to create continuous crane rail systems. Our products for concrete-supported runways include epoxy grout, steel soleplates and anchor bolt assemblies. We have sales offices worldwide. Visit our booth, our website at [www.gantrex.com](http://www.gantrex.com), or call us at +1.800.242.6873 to learn how we can help keep your cranes running.

**Gexpro**[www.gexpro.com](http://www.gexpro.com)

All companies in the steel industry can improve their productivity, lower costs, reduce waste and build more profitably with Gexpro's value-added distribution services. We are a full-line electrical distributor, energy services partner and project management resource for capital expansion, maintenance and energy upgrades. As a part of Rexel, a global electrical products distributor, we employ systems to share best practices globally, improving local results with lessons learned. With 2,100+ professionals from more than 120 locations in the U.S. and internationally, we develop custom programs to increase productivity and keep you on track. Whether it's lighting, sensors, motors, drives, energy management, switchgear or overall system integration, Gexpro professionals deliver technical support and application assistance.

**Gleason Reel**[www.hubbell-gleason.com](http://www.hubbell-gleason.com)

Gleason Reel Corp., a Hubbell company, provides rugged, mill-duty products and systems for electric cable management, hydraulic/pneumatic hose management, and mobile electrification, including spring- and motor-driven electric cable and hose reels, PowerTrak® brand cable/hose carriers, festoon systems and conductor bar systems.

**Global Gauge Corp.**[www.globalgauge.com](http://www.globalgauge.com)

Global Gauge Corp., an ISO 9001:2000 registered company, manufactures non-contact thickness measurement systems and coating weight gauges, lab gauges and profilometers for the metals industry, featuring the innovative "open architecture" PLC-based Perfecta that combines PLC and PC functionality into one system. This system comes complete with a host of standard communication protocols. We build our systems using widely available off-the-shelf components, ensuring low cost of ownership. The Perfecta, along with the PC-based Accura System, is designed

for applications ranging from hot/cold rolling mills to galvanizing and process lines. These measurement systems can provide closed-loop control and be supplied with our x-ray or isotope thickness sensors.

**Globex Corp.**[www.globexcorp.com](http://www.globexcorp.com)

Globex is an international, multi-discipline engineering consulting firm providing electrical, mechanical and structural engineering solutions. Since its founding in 1980, Globex has proven itself in many large and small engineering projects for heavy industry clients. Globex engineers specialize in the engineering, fabrication, installation, testing, diagnostic inspection, modernization, and in-service management of mill buildings, cranes, hoists, ship loaders, conveyors and similar systems, including all related structures.

**Gorman-Rupp Pumps**[www.grpumps.com](http://www.grpumps.com)

The Gorman-Rupp Co. manufactures hundreds of pump models for the steel industry. Standard centrifugal, self-priming centrifugal, submersibles, positive displacement rotary gear and diaphragm pumps are all designed for the various applications found in the mill. Gorman-Rupp has been supplying pumping solutions for clear, solids-laden and corrosive/abrasive liquids in steel mills for 80 years. Whether it is for runoff with mill scale, ash and other debris, or clean liquid for cooling and spraying, Gorman-Rupp has a pump you can depend on.

**GP Strategies**[www.gpstrategies.com](http://www.gpstrategies.com)

GP Strategies, a leading provider of operations and maintenance training and lean consulting services to the steel industry, delivers dramatic performance improvement and sustainable results. We provide customized training solutions using instructor-led, on-the-job, computer-based and Web-based training and documentation services, capital project support,

maintenance and reliability services, as well as leadership and professional development solutions. Our services help our customers gain a competitive advantage by effectively integrating their people, processes and technology. Visit [www.gpworldwide.com](http://www.gpworldwide.com) for more information.

**GPM-Eliminator Solid Pumping Solutions**[www.gpmco.com](http://www.gpmco.com)

We manufacture and distribute the toughest, most reliable submersible and horizontal slurry pumps found anywhere in the world. GPM-Eliminators range from 5 to 500 hp with discharges from 2 to 8 inches. GPM can custom design a system for the most abusive applications. We offer complete service and repair, including an aggressive trade-in program. We also represent world-class manufacturers providing solutions in air handling, mechanical seals, gearboxes, material handling systems, cooling towers, valves and many other fine products. When you need to pump it, blow it, heat it, seal it, move it, gear it or just cool it...think of GPM. Founded in 1978, GPM has customers throughout North America. GPM has six office locations with OEM manufacturing facilities in Duluth, Minn. We have been customer-driven for more than 35 years.

**Gradall**[www.gradall.com](http://www.gradall.com)

From ground level to boom end, Gradall's industrial maintenance machines are built and tested for tough yet efficient work. In BOF maintenance, the Gradall machine can deskull the converter lip or clean and replace tapholes. When maintaining electric furnaces, use the Gradall machine to remove slag and refractory buildup or clean and place tapholes. Around blast furnaces, Gradall machines maintain hot metal troughs by efficiently removing hard slag and refractory brick. Gradall machines are also ideal for torpedo car cleanup. Gradall's unique XL Series hydraulics integrate a load-sensing system that automatically adjusts for any job.



Gradall machines have heavy-duty boom rollers, a rugged boom and a boom tilt motor that is protected from damage at the rear of the boom.

### GrafTech

[www.graftech.com](http://www.graftech.com)

GrafTech International is a global company with more than 125 years in the graphite materials industry, offering innovative solutions for the most challenging applications. Its customers are located in more than 70 countries and represent a wide range of industries and end markets, including steel manufacturing, advanced energy and latest-generation electronics. GrafTech operates 18 principal manufacturing facilities on four continents and employs more than 2,600 people. GrafTech International features the following UCAR® branded electrodes: ALX™, AGX™, LFX™ and AGR™. For additional information on our superior customer service or UCAR-branded electrodes, visit us at [www.graftech.com](http://www.graftech.com).

### Graphite Electrode Sales Inc.

[www.geselectrodes.com](http://www.geselectrodes.com)

Founded in 1986, Graphite Electrode Sales (GES) is one of the largest importers of graphite electrodes for use in EAF and LMF applications in North America. GES also imports specialty graphite rounds, squares and blocks for various uses in the specialty market.

### Habets BV – Surface Technology

[www.habets.nl](http://www.habets.nl)

Habets Industrial Components & Surface Technology has been building its name and reputation since 1944 as a supplier and service partner in the field of industrial components and surface treatment.

### HARSCO

[www.harsco-m.com](http://www.harsco-m.com)

Harsco provides solutions to the metals industry for on-site logistics, product quality and resource recovery. With operations at more than 160 locations in over 30 countries,

our core competence remains to design, build, and operate plants and equipment under long-term service contracts. Our activities span across environmental remediation, metal recovery, co-product processing and

marketing, steel product surface conditioning and on-site logistics. We serve sectors such as steel, aluminum, foundries, copper, nickel, zinc and ferroalloys. We are honored to be recognized for our environmentally

**AIST MEMBER CHAPTERS**

**FORGING STRONGER PARTNERSHIPS**

AIST Member Chapters hold events each month that include dinner meetings, technical presentations and social events. Our members meet and network with others from the local community, while gaining valuable knowledge about the many aspects of iron and steel production.

AIST Member Chapters help to facilitate the exchange of ideas, strengthen our global network and represent an integral component of the AIST program.

For more information about your local Member Chapter or to get involved, contact Nicole Mattern at [nmattern@aist.org](mailto:nmattern@aist.org) or +1.724.814.3054, or visit [AIST.org](http://AIST.org).

beneficial services, having earned the Three Rivers Environmental Award (USA), the Business for a Green America Award (USA) and the Joseph Simard Award (Canada).

### HASTECC Engineering Inc.

[www.hastec.com](http://www.hastec.com)

HASTECC Engineering Inc. designs and manufactures high-pressure pumping systems for heavy-duty industrial applications such as descaling and forging press water-hydraulic systems. HASTECC also specializes in descale technology and offers a full complement of descaling-related products for steel and forging industries. HASTECC pumping systems offer significant technical advantages, resulting in increased reliability and reduced maintenance costs. Available HASTECC products range from replacement pumps and valves to replacement descale headers and spray chambers to complete systems. All HASTECC products are supported with in-house system design and installation expertise along with full technical support and a comprehensive spare parts inventory.

### HASTECC Rebs Inc.

[www.hastec.com](http://www.hastec.com)

HASTECC Rebs Inc. designs and manufactures TURBOLUBE air-oil lubrication systems for demanding, heavy-duty steel mill applications, including caster bearings, hot and cold rolling mill bearings, high-speed roller guides, table roll bearings, gearboxes, levelers, roll grinders and ID/OD fans. HASTECC TURBOLUBE air-oil systems offer significant advantages over traditional grease and oil-based lubrication techniques, including increased bearing life and significantly reduced lube consumption. A wide range of system configurations are available as well as turnkey installations. All HASTECC products are supported with in-house system design and installation expertise along with full technical support and a comprehensive spare parts inventory.

### Hatch

[www.hatch.ca](http://www.hatch.ca)

Hatch is an employee-owned, multi-disciplinary professional services firm that delivers a comprehensive array of technical and strategic services, including consulting, information technology, engineering, process development, and project and construction management to the mining, metallurgical, energy and infrastructure sectors. Hatch has served clients for more than 80 years and has project experience in over 150 countries. With 10,000 people in more than 65 offices, the firm has over US\$35 billion in projects currently under management.

### Hausner Hard-Chrome Inc.

[www.hausnerinc.com](http://www.hausnerinc.com)

Hausner Hard Chrome Inc. is headquartered in Owensboro, Ky., with operations in Elk Grove Village, Ill. Offering industrial hard-chrome, on-site brush plating, on-site repair, HVOF and TWAC. Thermal spray systems offer a wide variety of material choices. Large capacity to handle up to 100,000 lbs. in weight, 40 feet in length, 7 feet in diameter. On-site technicians available for consulting on the floor. Pickup and delivery in many areas. Service technicians certified in safety training for on-site work. Chromeseal self-lubricating hard chrome available. Free Flow Wear Plate by HHC available for a non-stick, wear-resistant plate, available in 4- x 8-foot sheet at various thicknesses. Our 150 employees are dedicated to providing the best the industry can offer.

### HBC-radiomatic Inc.

[www.hbc-usa.com](http://www.hbc-usa.com)

HBC-radiomatic is a leading supplier of wireless radio controls for industrial overhead cranes and other material handling applications. Since its establishment more than 60 years ago, the family-owned company headquartered in Crailsheim, Germany, has a strict emphasis on quality, safety and in-house production. More than 90% of all required parts come from HBC's production in Crailsheim.

HBC-radiomatic employs more than 400 people worldwide. With a global sales and service network of more than 40 international partners, HBC's customers around the globe always receive prompt service and support. HBC-radiomatic Inc. was established in 1998 as the North American sales and service contact. HBC is located in the greater Cincinnati metropolitan area.

### HEF Groupe USA

[www.hefusa.net](http://www.hefusa.net)

HEF Groupe is a worldwide supplier of specialty bushing and pins used in the most severe-duty applications, such as your mill facility. Our engineered bushing products have been used in steel and aluminum mills throughout Europe for more than 25 years. We can replace many rolling element bearings that have been misapplied and fail because of lack of lubrication or high-heat applications. Some of our customers in Europe include:

- ArcelorMittal.
- Interstop.
- Vesuvius.
- Ares.
- Ispat.
- Voestalpine.
- Danieli.

In the U.S., we are currently working on projects at:

- Allegheny Ludlum Steel.
- Nucor Steel (various locations).
- SMS Millcraft.
- JMC Steel (Wheatland Tube).
- Gerda (various locations).
- Surface Engineering Associates.
- Steel Dynamics Inc.

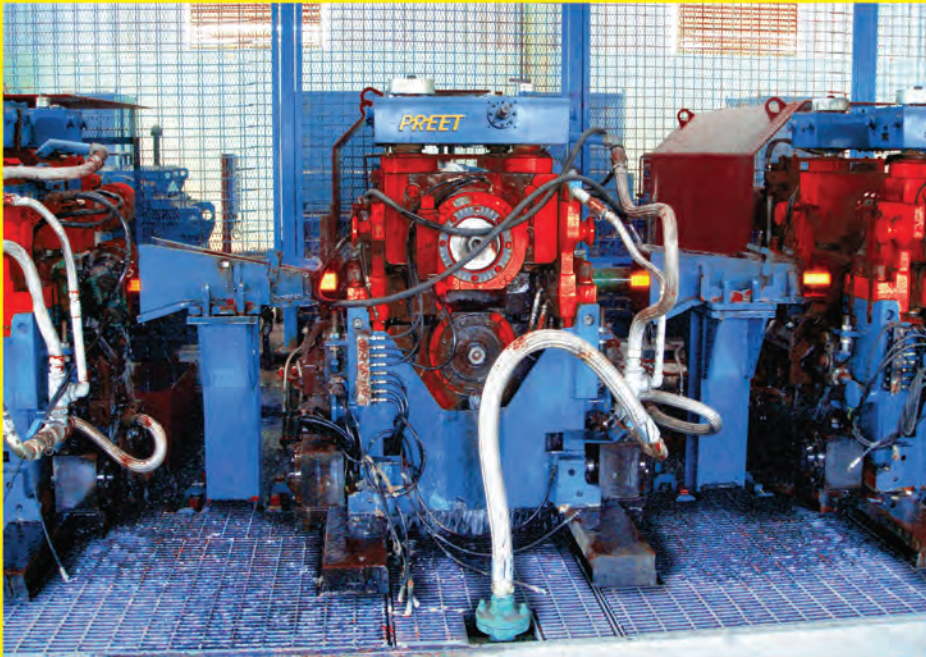
### HEG Ltd.

[www.hegltd.com](http://www.hegltd.com)

HEG Ltd. is a leading graphite electrode manufacturer in India. At 80,000 MT per annum capacity, it is the largest single-site electrode plant in the world. The company exports approximately 85% of its production to more than 30 countries. Our product range extends up to 30-inch-diameter sizes. We process sophisticated UHP electrodes capable of performing on some of the toughest furnaces.

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Our decades of manufacturing experience and the constant encouragement received from our customers have led us to further increase our production capacity. We will remain a significant global producer of quality UHP-, SHP- and HP-grade electrodes for EAF and LF applications.

### **Heraeus Electro-Nite**

[www.heraeus.com](http://www.heraeus.com)

Heraeus Electro-Nite provides molten metal measurement solutions engineered to the highest standards of quality and accuracy. Our sensor technologies help customers measure, monitor and control the molten metal production process. From IDCAS-Provac ultraclean sampling, to DDL slag/steel level and thickness measurement, to CasTemp® sensors for continuous measurement in the tundish, we continue to develop innovative technologies for every step of the molten metal process. All of our systems are ISO 9001:2000 certified and are recognized as industry standards for reliable measuring, monitoring and controlling. Our calibration lab meets regulatory calibration requirements of ANS/ISO/IEC 17025 accreditation. For more information, email [info.electro-nite.us@heraeus.com](mailto:info.electro-nite.us@heraeus.com).

### **Herzog Automation Corp.**

[www.herzogautomation.com](http://www.herzogautomation.com)

Herzog Automation Corp. is a leading supplier of manual and fully automatic sample preparation systems for spectrographic and x-ray analysis, tube delivery systems for sample transport, and laboratory automation for the steel, cement, mining and aluminum industries. Visit our website at [www.herzogautomation.com](http://www.herzogautomation.com) for our full product line.

### **Hickman, Williams & Co.**

[www.hicwilco.com](http://www.hicwilco.com)

This year we proudly celebrate 125 years in business, serving our customers since 1890. Hickman, Williams & Co. is a premier supplier of carbon additives and ferroalloys to the steel and foundry industries. Throughout our history, we have remained entirely employee-owned. Acquisitions in

recent years have positioned the company as a leader in slag foaming materials and further increased our capabilities to process carbon products and ferroalloys. Our Triad Alloys & Metals Division provides continuous global sourcing of ferroalloys and specialty metals. The successful addition of dolomitic and high-cal lime products has contributed further to the continued growth of the company. A network of sales offices, processing plants and warehouses throughout North America provides resources to deliver first-class service.

### **Hohl Industrial**

[www.hohlind.com](http://www.hohlind.com)

Hohl Industrial Services is a leading industrial construction contractor in the Great Lakes Region, providing a broad array of field and shop fabrication services for capital projects and maintenance tasks to planned outages and emergency breakdowns. We will provide design-build or turnkey construction services for equipment-intensive projects. With more than 65 years of experience, we have successfully completed projects throughout steelmaking operations. Our core services include rigging, millwrighting, steel fabrication and erection, heavy hauling, ASME code work, concrete and foundations. With multiple certifications, we are driven by the values of integrity, dependability and safety. We welcome the opportunity to discuss your upcoming construction needs.

### **Horsburgh & Scott**

[www.horsburgh-scott.com](http://www.horsburgh-scott.com)

The Horsburgh & Scott name is synonymous with geared power transmission applications for the steel industry. We offer products and services to maintain and improve production line performance as metal production line requirements have evolved over time. We have extensive experience in extending the productive life of geared assets and in helping to lower production and maintenance costs through gearbox upgrades and improved gear ratios that speed up processing lines. Our product offering is not limited to Horsburgh &

Scott brand equipment. We have experience with more than 90 different gearbox manufacturers' equipment and can rebuild, service, or replace any gearbox or gear component.

### **Hose Master**

[www.hosemaster.com](http://www.hosemaster.com)

Hose Master is a leading manufacturer of corrugated and stripwound bulk metal hose, assemblies, bellows and expansion joints. World-class quality and engineering problem-solving capabilities have made Hose Master an indispensable resource for the steel producing, steel processing and steel manufacturing industries. In any application — from coke ovens to the meltshop to the strip mill — our proprietary manufacturing processes yield products with unparalleled quality, safety and value for the harshest environments. When production interruptions are not an option, our products ensure less downtime and reduce maintenance costs. Steelmakers across North America trust Hose Master products for their most critical applications.

### **Houghton International**

[www.houghtonintl.com](http://www.houghtonintl.com)

Since 1865, Houghton International Inc. has been a leader in the development and production of specialty chemicals, oils and lubricants for the metalworking, automotive, steel and aluminum industries, along with a variety of other markets. Headquartered in Valley Forge, Pa., Houghton maintains manufacturing, distribution and research facilities throughout the world.

### **Hubbell Inc.**

[www.hubbell.com](http://www.hubbell.com)

Hubbell Inc. is an international manufacturer of quality electric and electronic products for a broad range of industrial, construction and utility applications. Hubbell products have been long known in the steel industry for providing rugged, reliable performance in the most demanding harsh and hazardous environments.

# Need Materials for Your Steelmaking Operation?

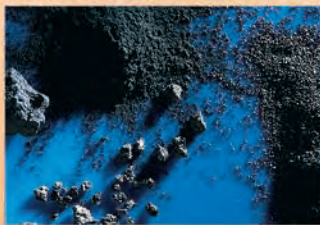
## We've Been Delivering What You Need for 125 Years!

***Hickman, Williams & Company has been the premier supplier of a broad range of materials and services to the steel and foundry industries since 1890.***

While our products and services have grown and changed over the years, one thing hasn't—our commitment to you, our customer. Today, we are meeting your needs with products like ferroalloys, carbon additives, metallurgical coke, pig iron, lime, nickel, specialty metals, fluorspar, silicon carbide and ladle nozzle sand.

### **Prompt Delivery.**

Our regional sales offices and warehouses are strategically located throughout North America to assure timely delivery of the products you need.



### **Technical Support.**

Our Technical Support Group has experience across a broad range of steel and foundry operations and is ready to help you use our materials to solve production problems, improve productivity and reduce cost.

Though times change, you can be certain that Hickman, Williams & Company is always at your service! Call us at 1-800-654-2152 or visit us online at [www.hicwilco.com](http://www.hicwilco.com).



**Hickman, Williams & Company**

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Fluorspar • Silicon Carbide • Ladle Nozzle Sand

100% EMPLOYEE-OWNED • 100% DEDICATED TO CUSTOMER SERVICE

## Hubbell Industrial Controls

[www.hubbell-icd.com](http://www.hubbell-icd.com)

Hubbell Industrial Controls Inc. provides engineering, manufacturing and start-up services for industrial control systems and accessories, including: Cableform® and Euclid™ brand AC/DC magnetic motor controls for overhead traveling cranes, AC/DC contactors and relays, AC solid-state motor controls, power disconnect switches, power limit switches, master switches, drum controllers, power resistors, speed-responsive switches, pendant pushbutton stations, lifting magnet controls, neutral grounding resistors, rectifiers, timers, arc suppressors and Femco™ brand radio remote control systems.

## Hubbell Lighting

[www.hubbellighting.com](http://www.hubbellighting.com)

Hubbell Inc., with a history dating back to 1888, began a series of acquisitions of prominent lighting businesses in 1963 that ultimately constituted Hubbell Lighting Inc. In 2002, Hubbell acquired Lighting Corp. of America, transforming Hubbell Lighting into one of the largest lighting manufacturers in North America. As a core business platform of Hubbell Inc., Hubbell Lighting draws great inspiration from the company's long history of proven performance since 1888 and its culture of new product innovation.

- Twenty-three brands of products and services offer lighting solutions for virtually every application.
- State-of-the-art research and development labs mean faster-to-market innovative product development.
- Largest offering of LED residential and commercial fixtures recognized by the Illuminating Engineering Society of North America.

## Hunger Hydraulics C.C. Ltd.

[www.hunger-hydraulics.com](http://www.hunger-hydraulics.com)

The Hunger Hydraulics Group is active in the hydraulic sector, with 14 companies and representatives across the world. Hydraulics is the main business segment of the group. The components and systems produced by Hunger Hydraulics are considered

internationally to be leading brands, fulfilling the highest requirements and being employed throughout the world. Our ability to develop solutions for customers is a direct result of our many years of experience in all aspects of hydraulics, and is also demonstrated in our production know-how, which is essential for the manufacture of components and systems at the highest level.

## Hutchinson Industries

[www.hutchinsoninc.com](http://www.hutchinsoninc.com)

Hutchinson Industries Inc. is a leader in the design and manufacture of enhanced mobility components for wheeled vehicles within the defense, security, commercial and industrial markets. Our product offerings include Tactical™ aluminum wheels, runflats, beadlocks, thermal hub covers, Safetank™ explosion-resistant fuel tanks, tire shields, complete turnkey assemblies, industrial polymer solutions and machined parts. Hutchinson specializes in matching the appropriate tire, wheel and mobility device to optimize the performance of each component. Hutchinson's newest innovation, the Tire Saver Shield™, provides protection to the highly stressed tire sidewalls of vehicles used in industrial environments. Visit our booth to find out how the Tire Saver Shield™ can cut costs!

## HydroAire Inc.

[www.hydroinc.com](http://www.hydroinc.com)

Hydro's global network of pump after-market service centers offers a range of services to the steel industry, including pump rebuilding, engineered replacement parts, field and turnkey services, hydraulic design modification, engineered upgrades, and pump performance testing capabilities up to 5,000 hp. Hydro's engineered solutions enable pump users to achieve equipment reliability and reduced maintenance and operation costs. Hydro works hand-in-hand with pump users to optimize the performance and reliability of their pumping systems. Our mission was developed in 1969 when we realized our capability of analyzing and understanding various designs, as well as their successes

or failures in specific applications and operating environments.

## Hyson Industrial

[www.hysonindustrial.com](http://www.hysonindustrial.com)

Hyson is a world-class engineering and manufacturing company providing solutions for precision metal processing applications, critical machines and vehicle equipment. We are showcasing our most popular product line for the steel industry, our Work Roll Separator Springs (WRSS). The WRSS line provides the correct amount of roll force to engage the work rolls and backup rolls, keeping the rolls and/or chocks separated and at a specified distance for both storage and while in use, and act as stress limiters. Nitro-Lock™, which features a snap-together design, is a lightweight alternative to traditional roll neck lock rings. Hyson Industrial also offers mill-duty hydraulic cylinders for backup separation, thrust-bearing compensators and other custom force solutions.

## Hyster Co.

[www.hyster.com](http://www.hyster.com)

Based in Greenville, N.C., Hyster Co. is a leading worldwide lift truck designer and manufacturer. Hyster Co. offers 130 models configured for gasoline, liquefied petroleum gas, diesel and electric power, with the widest capacity range in the industry — from 2,000 to 115,000 lbs. Supported by one of the industry's largest and most experienced dealer networks, Hyster Co. builds tough, durable lift trucks that deliver high productivity, low total cost of ownership, easy serviceability and advanced ergonomic features, accompanied by outstanding parts, service and training support.

## iba America LLC

[www.iba-america.com](http://www.iba-america.com)

iba America LLC continues to grow! Over the past year, we have implemented many new features to our standard line of products. We have also continued to help our customers meet their business goals of reduced downtime, increased efficiency and faster commissioning. Come by and





see our latest innovations in process monitoring and data acquisition systems.

### IDC Industries

<http://ldcind.com>

IDC is an innovative and service-oriented gearbox and gearbox repair company in North America. Established in 1968 in Detroit, Mich., IDC operates in a 85,000-square-foot facility. Our state-of-the-art gear cutting, gear grinding and CNC equipment allow IDC to provide heavy industry the demanding solutions it needs.

### Ideal Welding Systems L.P.

[www.idealweld.com](http://www.idealweld.com)

Laser coil joining is fast becoming the preferred method for joining strip in continuous processing lines. If you are looking for no over-thickness and the ability to successfully join the modern steels of today, then IDEAL's laser coil joining welder is the right choice. IDEAL's LAS coil joining welder uses a laser to prepare the strip ends, which are then brought together and laser welded, achieving a very small heat-affected zone, no over-thickness, increased productivity and material savings for processing lines. Further advantages include the ability to join different widths, thicknesses and material types, simplifying line changes while increasing productivity. Visit IDEAL at AISTech 2015 to learn more about our laser coil joining equipment and how we can help with your coil joining needs.

### INDEV Gauging Systems

[www.indevsystems.com](http://www.indevsystems.com)

INDEV Systems was formed in 1969 as one of the original founders and patent holders of web-based measurement. With more than 2,500 installations worldwide and manufacturing and support in the U.S., Germany, India and China, INDEV is a leading metals measurement and control company. For thickness measurement in hot and cold mills, service centers, as well as coat weight gauging and level 2 process control systems, INDEV provides high quality, support and overall

value. Through increased investment in development, support and open architecture solutions, INDEV is the clear choice for providing the best cost-of-ownership solution to our customers.

### Inductotherm Corp.

[www.inductotherm.com](http://www.inductotherm.com)


Inductotherm Corp., an Inductotherm Group company, will exhibit our latest innovations for continuous galvanizing and annealing lines, including

# InfoSight





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sales@infosight.com  
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channel and coreless induction coating and premelt pots. We will highlight our patented hollow metallic channel mold and molten metal penetration warning device (patent pending). Also featured will be Inductotherm's advanced induction strip heating technologies, which combine high frequency and high power using our patented processes. The mass induction heating of slabs, blooms and billets by induction for high-volume production lines will also be displayed. As a leader in induction technology, we manufacture the most advanced and extensive line of induction melting, heating, holding, and pouring systems for iron and steel processing.

### Industrial Pulley Puller

[www.pulleypuller.com](http://www.pulleypuller.com)

Industrial Pulley Puller manufactures a line of portable hydraulic pullers that can safely and efficiently be operated by one person to remove frozen rolls, bearings, gears, couplings and more from shafts. Customers may choose between two different models, each available in three different sizes ranging from 20 to 100 tons of force. The Wheel Mounted model can easily be rolled around the shop and positioned by a single operator. The Low Profile model is for those harder-to-reach applications and allows the use of a fork truck or an attachment for an overhead hoist or crane. The company will be attending AISTech for the first time in 2015.

### InfoSight

[www.infosight.com](http://www.infosight.com)

InfoSight's credo is "We Barcode Difficult Stuff™." InfoSight provides marking, reading and traceability solutions for the steel industry, with a focus on bar coding. Our booth will display automatic identification and tracking solutions for many different steel products — hot slab identification using tags, hot billet/bloom/beam blank identification using tags, dot matrix stencil marking and dot matrix stamp marking. Information on bar coding of tubes will be presented. Information on our weigh-measure-stencil systems for tubes will be provided. Information on inside

diameter laser marking systems for large outside diameter pipes will be provided. Bar code tag printing and long-distance scanning of bar codes will also be demonstrated. Sample tags will be available.

### Innerspec Technologies

[www.innerspec.com](http://www.innerspec.com)

Innerspec Technologies specializes in high-performance NDT solutions, and is a leader in EMAT technology. Innerspec is an ISO 9001:2008 registered company and manufacturer of integrated and portable ultrasonic non-destructive equipment for industrial applications using exclusive non-contact technology. For inspection of coil welds in pickle lines and finishing mills, the equipment integrates directly with flash butt, mash welds or laser welder. In-line strip inspection. Surface inspection systems using ultrasonic guided waves. Roll inspection. Installs on grinders for automated operation and detects bruises, surface and near-surface microcracks and internal defects. Weld inspection in ERW tubes. Thickness measurement at high temperatures.

### In-Place Machining Co.

[www.inplace.com](http://www.inplace.com)

In-Place Machining Co. (IPM) provides precision on-site machining, certified welding, laser and optical measurement, inspection and alignment, and MetalStitch® cold repair to cast iron. We specialize in providing quick-turnaround machining for projects involving as few as one and as many as 60 technicians worldwide. With multiple locations and a huge inventory of precision on-site machining equipment and measurement instrumentation, IPM can support your requirements within all areas of your mill, from routine maintenance to complete modernization retrofits. Call us at +1.414.562.2000 or visit us at [www.inplace.com](http://www.inplace.com).

### INTECO Group

[www.inteco.at](http://www.inteco.at)

The INTECO group designs and builds plants for the production of carbon steels including specialty steels

and super alloys. The product portfolio is comprised of melting, refining, casting, continuous billet and bloom casting, as well as special melting and remelting, ensuring single-source design of the entire steelmaking plant. This Austrian company provides technology and know-how for the entire production line from scrap to quality controlled finished products. INTECO's U.S. office — INTECO PTI — is located in Atlanta, Ga., and is focused on chemical energy and safety systems for electric arc furnaces. INTECO TBR casting technologies is the group's knowledge center for the engineering and design of new casting machines and the revamping of existing plants. Find out more about the INTECO Group online at [www.inteco.at](http://www.inteco.at).

### Integrated Power Services

[www.ips.us](http://www.ips.us)

Integrated Power Services (IPS) is a leading North American provider of electric motor repair, engineering and maintenance services for continuous process industries. IPS combines single-source capabilities and experience in metals and steel mill motor repair. Our coast-to-coast network of regional service centers places us in every major steel market in the U.S. for immediate-response emergency repair services and outage support. We supply electric motor and generator repair services, field services and new product sales, as well as remanufacturing, in-house stator coil manufacturing of B-stage fully cured coils and VPI-engineered insulation systems. Whether it's a planned outage or fast-tracking emergency services, we deliver quick turnaround times.

### Integrity Tax Consulting

[www.integritytax.com](http://www.integritytax.com)

Integrity is a property tax consulting firm specializing in reducing real estate and personal property taxes for commercial and industrial property owners. We make certain you are not paying a penny more in property taxes than you should be because we believe in saving you money. More importantly, we believe in doing it the right way. By working with, not against, local



government, we are able to negotiate property tax appeals that produce savings 99% of the time. Our technical expertise, coupled with our reputation and relationships with assessing officials, makes for a winning combination that produces tangible success measured in tax savings. Our work is performed purely on a contingency fee basis, creating a risk-free opportunity for our clients.

### **IntelliSchematic**

[www.intellschematic.com](http://www.intellschematic.com)

IntelliSchematic is a division of Telemedia Inc. and specializes in technical skills training and workforce development. IntelliSchematic utilizes technology to deliver machine-specific training and troubleshooting resources to today's industrial workforces. IntelliSchematic reduces critical machine downtime and improves equipment utilization by supplying maintenance teams with training resources, certified documentation and machine data through interactive platforms. IntelliSchematic's patented applications and e-Learning modules help technicians easily understand a machine's operating events in order to aid in the complex troubleshooting and training processes required by today's iron and steel mills.

### **IRCON Inc.**

[www.ircon.com](http://www.ircon.com)

Ircon and Raytek high-performance, non-contact, infrared temperature measurement sensors easily integrate into a wide range of industrial processes and equipment to provide complete solutions for iron and steel applications ranging from -50 to +6,500°F. With a best-in-class five-year warranty, the rugged Ircon Modline® 7 series suits a wide range of metals applications and features an IP65 enclosure and Modview™ Pro software for remote configuration and reporting. For the latest predictive and preventive maintenance solutions, Raytek offers its new equipment monitoring system. To learn how Raytek and Ircon equipment monitoring solutions can improve your iron and steel process, visit us at our booth and online at [www.ircon.com](http://www.ircon.com) and [www.raytek.com](http://www.raytek.com).

### **Iron & Steel Today**

[www.ironandsteeltoday.com](http://www.ironandsteeltoday.com)

*Iron & Steel Today* magazine brings the latest news, contracts, people, new products, technical and commercial features to the international steel industry. The target audience of steel producers, processors, traders, stockholders and related equipment/consumable suppliers receive five issues each year, supported by a series of steel industry wall maps and directories. Join us on our social media channels — [www.twitter.com/IronSteelToday](http://www.twitter.com/IronSteelToday) and [www.facebook.com/IronandSteelToday](http://www.facebook.com/IronandSteelToday) — to keep up-to-date with the latest news, forthcoming features, maps, directories and event information.

### **Irwin Car and Equipment**

[www.irwincar.com](http://www.irwincar.com)

Irwin Car and Equipment designs and manufactures custom-engineered, heavy-duty material handling equipment, including self-propelled and non-powered transfer cars, furnace cars, ladle and scrap cars, scale cars, kiln cars, locomotives, steerable trailers, AGVs, traction motor trucks, custom bogie assemblies, crane wheels, crane wheel assemblies, sheave wheels, custom steel wheels and wheel assemblies, turntables, scrap buckets, bulk material handling equipment and aftermarket spare parts.

### **ISRA VISION Parsytec Inc.**

[www.isravision.com](http://www.isravision.com)

ISRA VISION Parsytec, a member of the ISRA VISION group, is a leading global supplier of automatic surface inspection solutions for metals producers. With hundreds of systems installed worldwide, 18 of the top 20 global steel producers have realized the benefits of ISRA Parsytec leading technology. SURFACE MASTER assures accurate quality decisions that help optimize the entire flat steel and non-ferrous metals manufacturing process. ISRA VISION Parsytec's leading surface inspection technology can be used in all manufacturing production steps, including flat strip processing, slab through cold rolling, galvanizing and finishing. Learn more about our comprehensive product

line, offering solutions with the latest innovations in surface inspection technology. Visit us at AISTech 2015.

### **Itipack Systems**

[www.itipacksystems.com](http://www.itipacksystems.com)

Itipack Systems is a leader in automatic strapping solutions for all applications in the metals industry. From the primary level to service centers to warehousing product, Itipack Systems adapts its technology to each unique strapping application. Our focus is solely on strapping equipment — nothing else. Since we are not interested in consumable sales, we work well with OEM groups to create the entire handling package. Visit our website to discover more of what we do: [www.itipacksystems.com](http://www.itipacksystems.com).

### **ITR**

[www.itrco.com](http://www.itrco.com)

ITR provides reliability consulting, PdM services and continuous/dedicated/on-line monitoring and analysis solutions to 200+ steel mills in 44 states, 20 countries and on five continents. Services include vibration analysis, oil analysis, infrared thermography, ultrasonic testing, motor testing and applications engineering. ITR's unique vibration analysis hardware and software are specifically designed for accurate data acquisition and analysis of the complex variable load, variable speed equipment found throughout the steel industry. ITR provides remote, on-site and/or on-line data acquisition options and works closely with customers to design PdM partnerships based on their objectives and resources.

### **IVC Technologies**

[www.ivctechnologies.com](http://www.ivctechnologies.com)

Providing innovative technology solutions for 30 years, IVC Technologies is dedicated to helping our customers achieve optimal efficiencies through condition-based monitoring (CBM), utilizing our highly experienced and certified PdM analysts, cutting-edge technology and equipment with unsurpassed analytic capabilities. Our PdM services isolate and identify the failure modes most commonly

found in industrial equipment. IVC Technologies provides precision machine alignment and in-place balancing. Our team is prepared to develop and implement customized programs that account for all of the parameters associated with your specific situation. From basic analyses to in-depth personnel training, IVC Technologies is your single-source technology partner.

### J.C. Steele & Sons Inc.

[www.jcsteele.com](http://www.jcsteele.com)

Drawing on 126 years of experience advancing our proprietary stiff extrusion technology, we have developed a truly unique and effective approach for the agglomeration of difficult-to-handle materials in the metals, mining and industrial minerals sectors. Today, our stiff extruders recover fines, dusts, powders, filter cakes and sludges, converting them into STEELE Extruded Briquettes for material beneficiation or resource recovery. Our machines are designed and engineered for trouble-free operation and minimal downtime, thriving in the most demanding applications to provide a better return on your resource recovery and waste management investment.

### J.R. Merritt Controls

[www.jrmerritt.com](http://www.jrmerritt.com)

J.R. Merritt Controls will display a full line of precision-engineered joysticks, master switches, foot pedals, and portable fiberglass control consoles designed for mill-duty, industrial and environmentally sealed applications. AC and DC single- and multi-axis joysticks can be designed to your specifications for step, stepless and electrohydraulic proportional control. We offer a full range of adjustable seats and made-to-order operator armchair systems with mechanical, electrical or pneumatic adjustments. Floor slides for fore-and-aft adjustment of seating in pulpits and cabs are also available.

### J.T. Thorpe & Son Inc.

[www.jtthorpe.com](http://www.jtthorpe.com)

J.T. Thorpe & Son Inc.'s capabilities include engineering, design, project management, material selection,

scheduling, procuring and installing refractory linings. We have a great deal of experience in the refractory industry, having performed work in fields including power, cement, minerals, refining, steel, aluminum, copper and chemical. We have completed a number of new installation projects, and currently dominate all major and minor maintenance turnaround work on the West Coast and the Rocky Mountain regions. JTT was founded in San Francisco, Calif. Since that time, we have been in the business of designing and constructing refractory, fireproofing and acid-resistant linings in all industries.

### James Walker Mfg.

[www.jameswalker.biz](http://www.jameswalker.biz)

James Walker is a global supplier and manufacturer of well-proven sealing products designed and developed to cope with the increasing demands on equipment used within the metallurgical industry. Our emphasis on materials technology has enabled many customers to benefit from increased service life and cost savings delivered through our value-in-service initiatives. To learn more about James Walker and for further information on our diverse product offering and metallurgical experience, visit us at [www.jameswalker.biz](http://www.jameswalker.biz) and at our booth.

### Janus Automation

[www.janusautomation.com](http://www.janusautomation.com)

Janus Automation has extensive know-how on systems integration, covering all automation levels, from field instrumentation to corporate intranet systems. Janus Automation technical staff is experienced enough to carry out all the steps related to the automation processes of this industrial area:

- Basic and detailed engineering, design plans.
- PLC programming, DCS, drives and field equipment.
- Supervision and process control — HMI.
- Process tracking and optimization.
- Intranet information management.

We provide programming services of numerous PLCs, field equipment,

HMI software, and higher-level systems with their various communication protocols and programming languages. We have the flexibility to implement the best technology according to customers' needs or standards.

### Jayne Industries Inc.

[www.jayneindustries.com](http://www.jayneindustries.com)

Jayne has established itself as a North American leader and manufacturer of refractory anchors and hardware for more than 40 years. Jayne Industries is also well known for its custom steel and stainless steel fabrication services to a multitude of industries, the most prominent being steel. Our industry expertise is highly referenced in blast furnace penstock (including all down-leg components), capital projects exceeding 50 tons, stainless and other alloy fabrications, coke oven and mill/caster fabrications, and miscellaneous spare parts. Our two manufacturing facilities are located in Stoney Creek, Ont., Canada, and exceed 100,000 sq. ft. Custom projects along with repetitive consumable orders are where we exceed. Jayne is CWB certified and is an ISO 9001:2000 company.

### Jordan Transformer

[www.jordantransformer.com](http://www.jordantransformer.com)

Jordan Transformer specializes in remanufacturing, rewinding and repairing substation transformers, as well as mobile substation, GSU, auxiliary, station power, start-up and furnace transformers up to 200 MVA and 161 kV. Additionally, Jordan Transformer now designs and manufactures entirely new mobile substations, mobile transformers and mobile regulator trailers. Our testing is conducted per ANSI/IEEE standards, including impulse, partial discharge and temperature rise tests. We offer full field service capabilities, including turnkey projects, oil processing, new installations, gasket repair, LTC repair and more. We purchase used and failed transformers to be either remanufactured or reconditioned and subsequently resold.

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maximum Return on Investment result from designs created for the harshest conditions to give you service life that exceeds expectation.

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Industrial Trailers



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INDUSTRIAL SALES GROUP

9953 Broadway · P.O. Box 409 · Irwin, PA 15642  
Phone: 724-864-8900 · Fax: 724-864-8909

[www.irwincar.com](http://www.irwincar.com)



Industrial Sales Group

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**ATLAS CAR PRODUCTS**  
**PHILLIPS PRODUCTS**

**JW Hicks Inc.**[www.jwhicks.com](http://www.jwhicks.com)

JW Hicks Inc. (JWHI) is a leader in the supply of specialty refractory products to the steel industry. Primary product lines include flow control refractories and mechanical systems for both ladle and tundish applications, precast shapes for the full range of high-temperature industrial uses, and refractory lances for the treatment of both iron and steel. JWHI products have demonstrated world-leading refractory performance levels and associated low costs of use through customer partnerships throughout North America. Their innovative technical staff can provide application-specific designs to solve your most challenging problems.

**Kalenborn Abresist Corp.**[www.abresist.com](http://www.abresist.com)

Kalenborn Abresist Corp. manufactures abrasion-resistant pipes and fittings for material handling. Linings are suitable for carbon injection or conveyance of iron oxide, EAF dust, synthetic slag and scrubber sludge. ABRESIST fused cast basalt, KALOCER alumina ceramic including the KALBOND adhering system, KALCRET hard compound (cast, trowelled or sprayed), KALCOR cast alumina/zirconia and KALMETALL iron-alloy castings and overlay weldings are examples of products used in the lining of mill-scale flumes, chutes, furnace dust fans and cyclones for sinter dust and scrubber components. Kalenborn Abresist also offers KALFLEX pipes and elbows — flexible enough to absorb movement and vibration, yet tough enough to handle the abrasion.

**Kalmar USA**[www.kalmarglobal.com](http://www.kalmarglobal.com)

Kalmar offers a wide range of cargo handling solutions and services to ports, terminals, distribution centers and heavy industry. Kalmar is an industry forerunner in terminal automation and in energy-efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Through its extensive product

portfolio, global service network and ability to enable a seamless integration of different terminal processes, Kalmar improves the efficiency of every move.

**Kastalon Inc.**[www.kastalon.com](http://www.kastalon.com)

Providing the ultimate in coil protection, Kastalon is a full-service custom polyurethane manufacturer specializing in engineered compounds to meet precise physical and mechanical properties for all metal processing applications. Learn how polyurethane can provide a non-marring, wear-resistant surface virtually from one end of the metal processing facilities to the other. Stop by to discuss rollers, Koat-A-Roll® roller sleeves, crane bumpers, C-hook pads, Coil-Saddles™, coil floor pads, liners, lightweight thrust collars, mandrel sleeves, filler plates, slitter stripper tires, gib blocks, disposable table/arm rollers, Fork-Kushion® forklift bumpers, coil car pads, roll drivers and all other custom metal-forming polyurethane components.

**Kenwood USA Corp.**[www.kenwoodusa.com](http://www.kenwoodusa.com)

Kenwood is a worldwide supplier of two-way radios and custom systems to companies in the most demanding manufacturing environments. Products meet strict military standards for reliability and durability, plus most meet rigorous testing for dust infiltration and wet environments. Both analog and digital radios offer sophisticated features at an affordable price, while systems are custom designed for your facility's precise requirements for coverage. New digital radios offer expanded coverage and renowned Kenwood audio.

**KettenWulf USA L.P.**[www.kettenwulfusa.com](http://www.kettenwulfusa.com)

KettenWulf USA L.P. is a reliable partner for conveyor chains and sprockets for all applications in the steel and aluminum industries. KettenWulf USA L.P. is a subsidiary of the German-based KettenWulf Group, a leading manufacturer of conveyor chains, drivechains and sprockets. For more

than 80 years, KettenWulf has been synonymous with quality, trust, loyalty and reliability. Our product range covers conveyor chains for the entire production process — from stockyard technology for coal and ores to applications in powder metal facilities, furnaces, steel works, casting machines and rolling mills. High-performance products, industry-leading innovations and a complete focus on our customers' requirements form the basis of our leading reputation.

**Key Bellevilles**[www.keybellevilles.com](http://www.keybellevilles.com)

Key Bellevilles is the world's largest Belleville manufacturer. Serving more than 70 countries, engineering service is provided upon request. A large finished inventory allows 85% of orders to ship the same day or the next. Special orders are shipped within two weeks or less. Our phone service is available 24/7 for emergencies. Visit our booth and pick up a free engineering CD.

**Killark**[www.hubbell-killark.com](http://www.hubbell-killark.com)

Established in 1913, Killark has become a global provider of harsh and hazardous location products. The Killark range encompasses industrial and explosion-proof fittings engineered to withstand the toughest extremes in climate from the dry and arid Middle East, to tropical Asia, to frozen Northern Canada. Safety and reliability have been the cornerstones of our business for almost a century. Killark is dedicated to meeting customer needs with engineering solutions, new product development and on-time delivery in every phase of the project. This commitment underpins our proven ability to supply lower-cost total system solutions and savings over the lifetime of a project.

**Kocsis Brothers Machine Co.**[www.kocsisbros.com](http://www.kocsisbros.com)

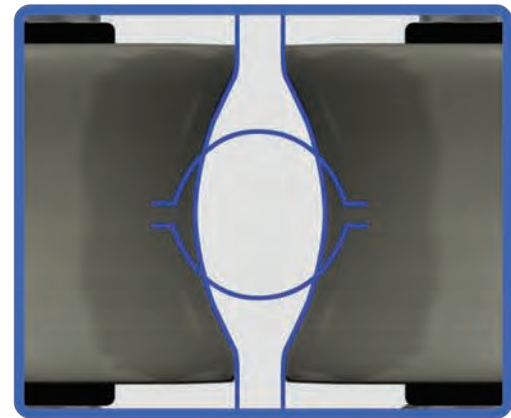
Kocsis Brothers Machine Co. provides maintenance support to hot strips, continuous casters and pickle lines. More specifically, Kocsis Brothers offers engineered roll welding

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Rod Mill Setup



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solutions, which include roll performance tracking, custom welding processes, inventory management and technical support. In addition, Kocsis Brothers offers a wide range of machining, inspection and assembly capabilities. These resources, coupled with decades of valuable steel industry experience, result in value-added turnkey solutions. Examples of our expertise include the reconditioning and manufacturing of pinch rolls, wrapper rolls, caster rolls, deflector rolls, entry guides, table roll assemblies and flash trimmers.

### **Konecranes Inc.**

[www.konecranesUSA.com](http://www.konecranesUSA.com)

Konecranes is a leader in the overhead crane industry, with a complete range of lifting equipment and one of the largest service teams in the world. From process cranes to chain hoists, safety inspections to full crane maintenance, our crane service team and engineers are committed to maximizing the life of your lifting equipment.

### **Koyo Bearings**

[www.koyousa.com](http://www.koyousa.com)

Koyo Corp. and its parent company, JTEKT, are major global suppliers of high-precision bearings and sealing technologies to the steel industry. Backed by years of experience and manufacturing know-how, JTEKT's steelmaking and steel rolling equipment products are designed to meet the challenging demands of casters, backup/work rolls, Z-mills and many other steel applications.

### **Kress Corp.**

[www.kresscarrier.com](http://www.kresscarrier.com)

Kress Corp. manufactures heavy mobile equipment for the steel, mining, and oil and gas industries. This includes machines to handle materials such as coal, iron ore, scrap, liquid iron and steel, slag, slabs, coils, blooms, etc. Machines include pallet carriers, slag pot carriers, high stackers, slab carriers, straddle carriers, ladle carriers and scrap bucket carriers. Kress has designed and manufactured innovative machines for nearly 50 years to provide fast and efficient

material handling systems for the steel industry. Kress machines are designed and manufactured with refined operator controls and systems, along with ease of maintenance and serviceability. Kress also has a significant parts inventory to service the machines through their product life cycle.

### **KT Grant Inc.**

[www.kt-grantinc.com](http://www.kt-grantinc.com)

KT Grant Inc. has been providing safe, automated refractory removal services to the melting industries since 1952. We offer both services and sales of equipment. We have developed many types of equipment and technicians to provide safe, efficient and cost-effective solutions for critical-path melting applications. We offer radio-controlled tearout machines for blast furnace troughs and runners, BOP, BOF, tundishes, ladles, nozzle punchers, BOF and EBT taphole drills, skimming machines, furnace hot cleaning and refractory gunning equipment, and many other refractory/scale buildup-related services. With more than 750 domestic customers and equipment in 38 countries, we have the breadth to support our customers 24/7/365.

### **Kubota Materials Canada**

[www.kubotametal.com](http://www.kubotametal.com)

Kubota offers a full line of heat, corrosion- and wear-resistant alloys employing high-tech static and centrifugal casting processes. In-house machining and fabrication facilities produce a wide range of products for the steel industry, including: skid buttons and riders for walking beam and pusher furnace applications; radiant tubes and furnace rolls for CGL/CAL/EGL and heat treat applications; sink and stabilizer rolls for zinc pots; dry rolls for thin-slab (tunnel) and plate reheat furnace processes; and coiler drums for Steckel mill operations. All manufactured under ISO 9001:2000 standards. In-house testing includes chemical, physical, metallurgical and non-destructive. In-house R&D program and collaboration with major university and industry associations.

### **LAKOS Separators and Filtration Solutions**

[www.lakos.com](http://www.lakos.com)

LAKOS Separators and Filtration Solutions provides centrifugal separators and complete systems that separate solids from liquids to protect cooling water and process liquids from troublesome solids fouling, buildup and abrasive wear. Working demonstration units of LAKOS products will be on display. Case studies and installation schematics will be available, and LAKOS personnel will be on hand to discuss application considerations. Single models are available for flowrates of 3-12,000 gpm for spray nozzle protection, cooling towers, heat exchangers, pits and basins, and pre-filtration to finer filters/water treatment. LAKOS Separators provides continuous operation, maintenance-free performance and automatic controls.

### **LAP Laser**

[www.lap-laser.com](http://www.lap-laser.com)

With more than 300 applications installed in the steel industry, LAP is one of the leading suppliers of dimensional measurement for rolling mills and other forming or treatment processes. CONTOUR CHECK, STRAIGHTNESS CHECK, CALIX and RDMS are just a fraction of the synchronous, real-time, non-contact measurement systems we supply. LAP's sensor technology offers outstanding accuracy, mechanical stability, shock and dirt resistance. Systems are available with thermal insulation, cooling systems, and easy maintenance that contribute to the overall performance of the systems. Through decades of experience, our engineers understand the conditions in metals industries and know how to protect measurement systems to keep them working.

### **Latanick Equipment Inc.**

[www.latanickequipment.com](http://www.latanickequipment.com)

Latanick Equipment Inc. has been designing and manufacturing custom steelmaking and processing equipment for more than 30 years. The WATT Fluid Applicator non-contact oiling and coating system is





recognized within the industry as the most reliable oiling and coating system for such processes as pickle and galvanizing lines and temper mills. Its patented non-contact process delivers a uniform coating onto a passing surface with a high level of accuracy regardless of line speed, strip width or flatness, either on the top, bottom or both sides. We will exhibit the WATT Fluid Applicator.

### **Lechler Inc.**

[www.lechlerusa.com](http://www.lechlerusa.com)

Lechler is a leader in spray technology, with manufacturing facilities located throughout the world. We offer engineering solutions and products for descaling, roll cooling, continuous casting, pickling lines, air and pollution control, gas cooling and dust suppression. Lechler continues to set the standard for steel mills by staying innovative with new products through research and development, so when you choose Lechler, you're not just a customer, but a partner.

### **Lehigh Heavy Forge Corp.**

[www.whemco.com](http://www.whemco.com)

Lehigh Heavy Forge, located in Bethlehem, Pa., USA, has been in operation for more than 125 years, supplying a wide range of large open-die forgings primarily for the metals and power generation industries. Our products include advanced technology forged steel work rolls for ferrous cold mills and non-ferrous hot and cold mills. We supply forged steel backup rolls weighing up to 147 metric tons for all types of rolling mills. These rolls are consolidated on our 10,000-ton forging press, the largest in the Western Hemisphere. Please stop by our booth to talk with us.

### **Lenox Instrument Co. Inc.**

[www.lenoxinst.com](http://www.lenoxinst.com)

Lenox Instrument Co. manufactures the FireSight high-temperature camera system for furnace, boiler or hot area applications. These camera systems can be air- or water-cooled for portable or fixed installations. By seeing directly into your furnace or boiler, you might see flame characteristics,

process flow, product orientation, refractory conditions and other problems before damage occurs. Specially designed for high-temperature environments and backed by more than 90 years of experience, Lenox FireSight systems have a proven record of reliable performance and are backed by a two-year warranty. Stop by our booth to discuss how we can help you solve difficult problems or provide visual as well as thermal imaging access within your furnace.

### **LIMAB North America**

[www.limab.com](http://www.limab.com)

LIMAB manufactures laser-based measurement sensors and systems. Among the systems provided are the Slabprofiler for dimensional measurement of slabs in the caster area; the Hotprofiler for measurement of bars, profiles and sections in hot rolling mills; and the Tubepfiler for measurement of tubes in rolling mills and welding mills. LIMAB currently has installations worldwide and operates out of five offices and through its representatives.

### **Linde LLC**

[www.lindeus.com](http://www.lindeus.com)

Welcome to Linde! We offer technologies and industrial gases for all steps in the steel mill process chain. Regardless of whether your production is based on ore or scrap, our solutions deliver proven efficiency gains. Our OXYGON® system delivers proven efficiency gains during ladle preheating. At the refining stage, we supply argon and nitrogen to remove inclusions and homogenize molten metal temperature. Our REBOX® brand can increase your throughput, cut energy costs and reduce emissions in reheat furnaces. Linde is also a leading supplier of process gas heaters, steam methane reformers, pressure swing absorption units and carbon dioxide purification units used in natural gas-based DRI plants.

### **Lintern Corp.**

[www.lintern.com](http://www.lintern.com)

Lintern Corp., established in 1892, pioneered the severe-duty air

conditioning industry more than 70 years ago and continues to lead the industry worldwide. Headquartered in Ohio, we have sales offices in the U.S. and in several countries around the world. All Lintern products are engineered and tested to ensure efficient operation and long-term reliability in applications subject to intense heat, heavy dirt loading, vibration and corrosive environments. Among the value-added services Lintern offers:

- A comprehensive development and testing program.
- The world's highest-quality components and products.
- Continued commitment to R&D.
- Unmatched dedicated inventory.
- A staff of sales engineers with extensive field experience.
- Product support.
- Lintern performance and worldwide presence.

### **LISMAR Inc.**

[www.lismar.com](http://www.lismar.com)

From its inception, LISMAR has been a driving force in the design, development, installation, and service of roll surface and subsurface inspection instrumentation. Initially with eddy current, then COMBI (eddy current and ultrasound) and the newly automated SurfaceWave inspection, data acquisition and analysis systems, LISMAR offers the most advanced systems operating in mill environments. GEORG is a world-leading machine tool builder that constantly sets new goals for innovation, technology and cost-effective solutions for the machine tool industry. The product portfolio consists of roll grinding machines, high-performance lathes, drilling and milling machines, multi-spindle drilling and milling machines, as well as special machine tools.

### **Logika Technologies**

[www.logikatech.com](http://www.logikatech.com)

LOGIKA Technologies sensors and state-of-the-art optical systems provide a wide range of non-contact measurement tools. These products accurately deliver in-process material location, dimensional feedback and precision temperature measurements

that enable metal producers to optimize operations. Our products are designed to function flawlessly in the harshest environments and under the most extreme conditions. Logika's hot metal detectors, loop scanners, laser distance meters, optical barriers, pyrometers, furnace camera systems, and caster cut-to-length systems are affordable and provide an excellent return on investment. Logika Technologies is committed to innovation, excellent customer service and successful solutions for our customers worldwide.

### Loveman Steel Corp.

[www.lovemansteel.com](http://www.lovemansteel.com)

Loveman Steel, an ISO 9001-2008 company, has been providing innovative solutions for large and small industrial projects to the metals, energy, chemical, machine tool and industrial markets for more than 75 years. We will be exhibiting our full line of heavy-plate fabrications, coil annealing hardware products and PVQ steel supply capabilities. Stop by to view our innovative, high-convection coil annealing technology and large fabrication capabilities. Our sales team will be available to answer any inquiries you may have. Contact us directly at +1.800.LOVEMAN (+1.800.568.3626) for all your fabrication needs.

### Ludeca Inc.

[www.ludeca.com](http://www.ludeca.com)

Ludeca is a leading provider of preventive, predictive and corrective maintenance solutions, including laser shaft alignment, pulley alignment, bore alignment, straightness and flatness measurement, thermal growth monitoring, vibration analysis and balancing equipment, as well as related software, services and training.

### Lumar Metals North America

[www.lumarmetals.com.br](http://www.lumarmetals.com.br)

Lumar Metals provides innovative solutions, technical support and supplies products to BOFs, EAFs, EOFs, blast furnaces and more. Our technologies include: Slagless® lance for BOF, Protect Block® for EAF,

long-life® panel and ELD® (Earliest Leak Detection) device. Our products for EAF include: complete GAS Injection Systems PLC/Valve Rack, supersonic injectors, oxy-fuel burners, carbon and lime injectors (called FlexOx family), copper cooling boxes, Protect Block family and water-cooled equipment: sidewall panels (steel, copper), ducts, roof. For BOF: water-cooled oxygen lances and tips, post-combustion and double-flow deskulling lances for BOF mouth. For blast furnace: tuyere, cooled tuyere, staves.

### LumaSense Technologies

[www.lumasenseinc.com](http://www.lumasenseinc.com)

LumaSense Technologies is a global leader in providing temperature and gas-sensing solutions to industrial, energy, medical and clean technology markets. We design and manufacture sensors for end-user and OEM applications. LumaSense has proven expertise in developing state-of-the-art infrared and fiber-optic temperature sensors, radiometric thermal imagers and gas analyzers.

### M. Brashem Inc.

[www.mbigraphite.com](http://www.mbigraphite.com)

We have been supplying the North American steel industry for 28 years. Our MBI Graphite Division is a stocking distributor of graphite electrodes, carbon electrodes, carbon and graphite blocks — extruded, vibro-molded and iso-molded. Our MBI Rolls Division supplies mill rolls to bar and structural mills throughout North America.

### Mack Mfg.

[www.mackmfg.com](http://www.mackmfg.com)

Mack Mfg. Inc. is a manufacturer of quality below-the-hook crane attachments of all styles and sizes. Whether your requirement is a scrap handling grapple or a slag bucket, Mack is the company that will meet your needs. We are a family-owned and -operated company since 1942. We engineer and manufacture our equipment from beginning to end. Detailed quality standards are closely inspected at every stage of the process. Mack Mfg.

Inc. stands behind our products, and our after-sales service is second to none. At Mack, we are committed to quality first!

### Magid

[www.magidglove.com](http://www.magidglove.com)

Magid is one of America's leading manufacturers, distributors and direct suppliers of personal protective equipment and safety services. Since 1946, the company has been a valued partner to more than 25,000 customers, proudly offering its own signature Magid-branded products, as well as safety products from other high-quality manufacturers. Magid helps its customers protect workers, reduce injuries and lower costs.

### MAGNA

[www.magnitasnavarras.es](http://www.magnitasnavarras.es)

Magna is an MgO-based monolithics refractory producer. All of Magna's products are produced using raw material from Magna's specialized mines located in Spain and Brazil. Magna's products include hot and cold patch materials for EAFs; gunning materials for EAFs and ladles using Magna's high-tech gunning machines, robot and laser scan; and tundish lining material, including Coldmag, a self-hardening tundish working lining material.

### Magneco/Metrel Inc.

[www.magneco-metrel.com](http://www.magneco-metrel.com)

Magneco/Metrel produces unique, proprietary, Metpump brand, colloidal silica (sol-gel) -bonded monolithic, pumpable refractories that exhibit excellent properties and characteristics for long service life and provide exceptional value. They can be easily poured, pumped into place or applied by pneumatic shotcreting, or prepared as precast shapes. They require minimal installation and dryout time, thereby minimizing downtime and installation costs and increasing availability and maximizing profitability.

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## Magnesita - KMR

[www.magnesita.com](http://www.magnesita.com)

Magnesita's mission is to provide integrated solutions in services, refractories and minerals that maximize our clients' results in order to create profitable and long-term partnerships globally. The company operates numerous plants and mining units around the world, with a capacity to manufacture more than 1.4 million tonnes of refractories per year. Magnesita is a vertically integrated refractory company, with over 70% of the raw materials used in production coming from its own mines. More than simply providing products, Magnesita offers solutions to its customers via a team of experts in refractory technology, and professionals specialized in metallurgy, computer simulation, and the development of new raw materials and manufacturing methods.

## Magnetech Industrial Services

[www.magnetech.com](http://www.magnetech.com)

We provide a wide range of industrial equipment services to meet all your plant maintenance needs: repair, rewind and refurbishment of all your equipment from the transformer to the driven component. AC/DC motors and generators. Motor control centers. Blowers. Transformers. Switchgear and circuit breakers. Overhead cranes. Lifting magnets. Preventive and predictive maintenance. Comprehensive field services including planned outage services. Emergency services are available 24/7.

## Magnetek

[www.magnetekmh.com](http://www.magnetekmh.com)

Magnetek is a provider of innovative power control and delivery systems and solutions for the material handling industry. With more than 190,000 adjustable frequency drives, 146,000 radio remote controls, 320,000 pendant stations and 20,000 brakes working in the field, we have a proven track record in industries such as automotive, aerospace, steel, aluminum, paper, nuclear power plants, locomotive yards and more. By providing you with the best quality products,

service and complete system solutions, we offer our unwavering dedication. We employ some of the top development and application engineers in the industry, who will design and implement cost-effective control solutions that meet and exceed your expectations. Come visit our booth to find out more!

## Management Science Associates

[www.msa.com](http://www.msa.com)

MSA's Metals and Advanced Manufacturing Division has been providing turnkey computer systems, process control and optimization systems, and other services to the steel industry since 1982. MSA develops applications for scrap yard management, melting, refining and casting operations. MSA's Blending Optimization Software Suite™ (BOSS) determines the least-cost combination of raw materials to produce a given heat, lineup or production schedule. MSA's Raw Material Data Aggregation Service™ (RMDAS) collects purchase orders for ferrous scrap from more than 21 steel companies. MSA has partnered with AIST to develop and host the AIST Process Benchmark® (APB®), a Web-based service for benchmarking operational performance metrics for select AIST Technology Committees.

## MAS Air Systems LLC — a New York Blower company

[www.mas-fan.com](http://www.mas-fan.com)

MAS Air Systems LLC and its parent company, New York Blower, design, engineer and manufacture a broad range of industrial fans. We are constantly expanding our product offering to meet the growing needs of industrial customers. We operate fan fabrication plants in Indiana, Kentucky, Illinois and Pennsylvania. International subsidiaries fabricate our products in various locations around the world. We have an experienced sales force with offices in North America and several international offices that focus on air moving products. Our durable and energy-efficient fans and dampers are designed

for long life in the harshest and most demanding industrial applications.

## Matrix NAC

[www.matrixnac.com](http://www.matrixnac.com)

Matrix NAC, a subsidiary of Matrix Service Co., is a direct-hire union construction company providing services in the U.S. and Canada. Matrix NAC provides a full range of general construction, maintenance and renovation services to the energy, steel and process sectors. Our work is characterized by the highest standards of safety, quality and teamwork, enabling us to respond to the needs of our customers to deliver safe, on-time and in-budget projects.

## Maxcess (Webex, Fife, Tidland, MAGPOWR)

[www.maxcessintl.com](http://www.maxcessintl.com)

Fife and Fives North American Guiding Systems combine more than 130 years experience in providing guiding and measurement solutions for the metals processing industry. In addition to a comprehensive product portfolio, Fife is a leading supplier of strip guiding and position/width measurement systems. Whether the needs are for controlling conventional uncoilers, intermediate guide frames or recoilers, an edge baffle positioning control system, in-furnace guiding or wet section guiding, Fife provides the requirements for the application. Maxcess brings together the leading brands of Webex Precision Rolls, Fife Guiding and Inspection (now expanded to include Fives North American Guiding Systems), Tidland Winding and Slitting and MAGPOWR Tension and Torque Control.

## Mazzella Companies

[www.mazzellacompanies.com](http://www.mazzellacompanies.com)

At the Mazzella Companies, we provide ideal lifting solutions, offering all styles of slings, overhead cranes, hoists and engineered lifting devices. We also provide in-field inspection and repair services. In addition, Mazzella Crane Service has significant experience with modernization projects such as AC/DC controls, radio controls and



variable frequency drives. Whether your operators require a specific training course for OSHA compliance for cranes, slings, hoists and rigging hardware, or if your company requires a complete site assessment, we can assist you in creating a safe and reliable workplace. Mazzella has one of the largest inventories of wire rope, hoists, hoist parts, pullers, rigging hardware products and other distributed products in the industry.

### McKeown Group

[www.mckeowninternational.com](http://www.mckeowninternational.com)

The McKeown Group is a series of multi-national, multi-disciplined companies that have serviced international metal industries for more than 30 years, offering a wide range of engineered products and services. Products include electrodes, EAF and ladle refractories, mag dolomite brick, high-alumina brick, insulating brick for most metal and furnace applications and silica/fireclay refractories for ironmaking, including a complete product line for blast furnace stoves. McKeown's subsidiaries are: DMC Inc. Continuous Casting, MIG Inc. and Empire Acoustical Inc. McKeown products are presently being supplied and installed in: Africa, China, Mexico, India, South America, United States and Europe. We look forward to assisting you in reducing your operating costs!

### Measurement Systems International, a Rice Lake Weighing Systems brand

[www.ricelake.com](http://www.ricelake.com)

The Measurement Systems International (MSI) brand of Rice Lake Weighing Systems has been a provider of weighing, load monitoring and process control solutions for more than 35 years. MSI is most noted for its expertise in overhead weighing tools, featuring a complete offering of electronic crane scales, load sensors, dynamometers, integrated radio frequency wireless controllers and more. MSI products include CellScale wireless networks, Challenger and Porta-Weigh Plus electronic crane scales, and Dyna-Link tension dynamometers. All

products feature multiple models, capacities and options to satisfy specific application needs.

### Melter

[www.melter.com.mx](http://www.melter.com.mx)

Melter S.A. de C.V. has served the steel industry for 20 years, providing high-quality design and manufacturing of water-cooled components and systems for electric arc furnaces. Our product line includes water-cooled panels, roofs, lower shells, upper shells, superstructures, masts, electrode arms, water-cooled ductwork, dropout boxes, scrap buckets, ladles, tundishes and transfer cars. The company also designs and manufactures heat recuperators used in reheat furnaces, as well as economizers for industrial boilers.

### Merford Cabs

[www.merford.com/cabins](http://www.merford.com/cabins)

At Merford we believe that everyone, anywhere in the world, is entitled to a safe and comfortable workplace. Every detail in our cabins counts: from the synchronized movement of armrests to provide improved ergonomics, to optimal visibility, clean air and responsible sound and vibration levels. By paying attention to every detail and every specific wish, we enable operators to work with greater enjoyment and efficiency. In many instances, the use of our cabins translates into a demonstrable decrease in absence due to illness and into higher operator productivity. Each cabin can be fully designed to meet your wishes, and of course, our cabins meet all legal requirements.

### MERMEC Inc.

[www.mermeccgroup.com](http://www.mermeccgroup.com)

MERMEC Inc. is a subsidiary of MERMEC Group, a technology innovator specializing in designing and developing end-to-end diagnostic solutions for railways and industrial sectors. MERMEC Group, with its subsidiary Tecnogamma, offers a complete range of measuring solutions for steel industry applications: hot and cold inspection systems for the comprehensive dimensional measurement

of hot rolled long products with complex profile, seamless rolled rings and monoblock wheels, large open die forgings, both axial-symmetric and special forgings. Headquartered in Monopoli, Italy, the MERMEC Group is led by the parent company MERMEC S.p.A. (Italy) and has subsidiaries in the United States, Italy, England, France, Turkey and China.

### Messinger Bearings

[www.kingsbury.com](http://www.kingsbury.com)

Messinger Bearings has more than 100 years of experience in custom-designing and manufacturing large-diameter rolling element bearings for a wide range of industrial equipment applications. Messinger bearings have been the first choice for many heavy-duty OEM applications and are often specified as reliable replacement bearings. Messinger has the capability to manufacture bearings up to 25 feet in diameter (largest in North America). For new or expert rebuilding of custom slewing bearings, Messinger goes above and beyond supplying the bearing, offering complete solutions (field inspections, bearing storage tanks, etc.). With Messinger's expanding core of expertise and experience, you can expect a quick response, unparalleled application support and timely delivery.

### Metal Products and Engineering

[www.mpe-us.com](http://www.mpe-us.com)

This year, MPE-US and the Agellis Group will be co-exhibiting. We will feature the new EMLI III electromagnetic measurement systems manufactured by Agellis. These systems can be used for mold level measurement, tundish level measurement and slag detection in continuous casters, basic oxygen furnaces and electric arc furnaces. In addition, we will feature the complete line of WADECO microwave measurement, level measurement and edge detection systems. This includes all types of bin-level measurement and single-point level detection, solids flow and blocked chute detection, the SMTS BOF taphole plugs for slag reduction and control, and the complete line of ITEMA infrared

slag detection and hot spot detection systems.

### **MICRO-EPSILON America**

[www.micro-epsilon.com](http://www.micro-epsilon.com)

MICRO-EPSILON is a global specialist in precision sensors and measurement systems. For more than 40 years, MICRO-EPSILON has provided solutions for the measurement of dimensions, distance, temperature and color. The company provides the widest range of sensors, systems and turn-key inspection systems in the world. MICRO-EPSILON measurement systems are integrated into production lines to execute fully automated quality control applications, such as thickness and profile measurement. The measurement systems are integrated in hot and cold rolling lines, service centers, slitting lines, coating and cutting lines. In addition to independence of the respective alloy, another advantage is the stability that can be gained from the high-quality measurement data provided.

### **Middough Inc.**

[www.middough.com](http://www.middough.com)

Middough Inc., an engineering, architectural and management firm, provides a full range of traditional and specialized design, technical and management services worldwide. With more than 60 years of experience in the metals industry, Middough's seasoned professionals understand the production and finishing processes. We evaluate primary production equipment and explore new methods to keep mills competitive. We help clients justify, select, integrate, and install systems and modernize existing mills. We team with world-class clients to deliver high-tech solutions and facilities to a broad spectrum of commercial, process, institutional, life science and manufacturing industries. Clients have been with us since we opened our doors in 1950.

### **Midrex**

[www.midrex.com](http://www.midrex.com)

Midrex Technologies Inc. is a world leader and innovator for direct

reduction ironmaking technologies. For more than 40 years, Midrex has provided reliable and flexible DRI technologies that maintain outstanding product quality and production while employing the latest eco-friendly technologies. MIDREX® plants are the industry's most productive and reliable direct reduction plants, with a proven history using the broadest range of energy sources and raw materials while delivering unparalleled operating flexibility and economic value. Midrex continues to develop innovative new DRI solutions that improve our new plant designs as well as support our existing plants wherever possible. The company's headquarters and technical center are located in Charlotte, N.C., with offices in the U.K., China and India.

### **Midwesco/TDC Filter**

[www.midwesco-tdcfilter.com](http://www.midwesco-tdcfilter.com)

Midwesco/TDC Filter provides more than a solution — we also have experience and expertise. In working with Midwesco/TDC Filter, you will gain access to more than 200 years of direct application experience from our senior and product managers. Since 1968, Midwesco/TDC Filter has helped thousands of companies worldwide in more than 100 market segments. Midwesco/TDC Filter also assists its customers in understanding new filter and product technology and assists in achieving optimum baghouse performance through on-site baghouse seminars, maintenance and engineering services. Our quality control standards and commitment to quality products for our customers have influenced our decision to continue manufacturing our filter bag products in the U.S.

### **Midwest Industrial Supply Inc.**

[www.midwestind.com](http://www.midwestind.com)

Midwest's products and solutions for dust control stop all types of particulate matter from entering the air and water, solving even the most stubborn problems, including fugitive dust from stockpiles, steel mills and industrial facilities. Our dust control products

are environmentally safe, reliable and effective. Our Managed Service Program provides a comprehensive, site-specific solution to excess dust caused by the frequent use of unpaved roads by major industrial operations. We evaluate traffic flow and volume, soil quality, track-on and contamination sources and more before creating a customized program.

### **Mi-Jack Products**

[www.mi-jack.com](http://www.mi-jack.com)

Mi-Jack has been servicing the material handling industry since 1955. For more than 50 years, personalized service and superior product innovation have made the name Mi-Jack synonymous with quality, and today those same ideals continue to make Mi-Jack a premier supplier of cranes and technology to the material handling industry.

### **MikroPul Nederman**

[www.mikropul.com](http://www.mikropul.com)

MikroPul Nederman offers complete air-quality system design and implementation capabilities, including process analysis, equipment supply, installation, start-up and testing. The company invented the pulse-jet dust collector in 1956, and has a proven line of products, including cyclones, cartridge collectors, reverse air collectors, shaker collectors, wet and dry scrubbers, wet electrostatic precipitators and gas coolers. As a leader in dust control and product recovery systems, MikroPul Nederman has operations in more than 30 countries. With its American headquarters in Charlotte, N.C., the MikroPul Nederman Large Systems Division in Pittsburgh, Pa., was established specifically to serve the steel, foundry and non-ferrous industries.

### **Minteq International Inc.**

[www.mineralstech.com](http://www.mineralstech.com)

Minteq is an international producer of mineral-based monolithic refractories, alloy wires, calcium metal, refractory coatings, laser measurement devices and shapes. Moreover, we provide innovative application

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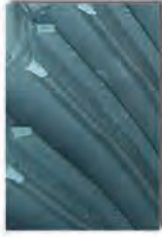
## Reliable and Profit Generating Technologies



New Technology  
Skirts, Hoods &  
Flux Chutes



AmeriBronze® Technology  
(US Patent 6,890,479)



AmeriSpine® Technology  
(US Patent 2,373,895)



AmeriCOP® Technology  
(US Patent 2,283,566)



AmeriAntiSlag® Technology  
(US Patent Pending)



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and measurement equipment and advanced technical support. All of our products and services are backed by our total commitment to continuous product and service improvement and to building strategic working partnerships with iron- and steelmakers worldwide.

### Mitsubishi-Hitachi Metals Machinery Inc.

See Primetals Technologies U.S.A. Holdings Inc.

### Mobil Industrial Lubricants

[www.mobilindustrial.com](http://www.mobilindustrial.com)

Backed by more than 100 years of industry expertise, the team behind Mobil Industrial Lubricants continues to set new benchmarks in lubrication excellence to help its customers enhance their steel production in a safe and sustainable manner. Today, Mobil Industrial Lubricants offers a comprehensive line of Mobil SHC™ synthetic lubricants and premium Mobil-branded greases and oils, including:

- Mobil SHC 600 next-generation optimum performance circulating and gear oils.
- Mobil SHC Gear next-generation supreme gear oils.
- Mobil SHC Polyrex — a family of high-performance bearing greases capable of delivering exceptional equipment protection under temperatures as high as 330°F.

For more information, call +1.800.MOBIL.25 or visit [mobilindustrial.com](http://mobilindustrial.com).

### Moduloc Control Systems

[www.rotalec.com](http://www.rotalec.com)

Moduloc is a U.K. manufacturing company with a 30 years of experience in supplying non-contact optical sensors and laser measuring systems to the metals industry. We provide the latest technology for precise product detection and measurement in the mill as well as lasers for crane control, material handling and positioning. Moduloc also manufactures laser based gauges

for measuring hot or cold product length, width and thickness. As part of the Rotalec Group, we provide our customers in North America the highest level of support via Rotalec USA Inc. in Minnesota and Rotalec Inc., with offices in Hamilton, Ont., and Montreal, Que., Canada.

### Moffitt Corp.

[www.moffitthvac.com](http://www.moffitthvac.com)

Moffitt Corp. is a leader in industrial ventilation, and we are committed to providing you with a cooler and more comfortable facility. We supply, manufacture and install complete ventilation systems for a variety of companies in the metals industry. Specializing in natural ventilation, we offer a variety of natural ventilators, including the MoffittVent, the Labyrinth, a complete line of wall louvers and more. Moffitt has offices in Jacksonville Beach, Fla., USA, but we work throughout North America. The sales team is supported by our in-house ventilation design team of engineering and air movement specialists. Our turnkey service, supported by our experience and expertise, is why Moffitt Corp. has been ventilation's natural solution since 1961.

### MORE s.r.l.

[www.more-oxy.com](http://www.more-oxy.com)

MORE s.r.l., based in Gemona del Friuli, Italy, is a leading supplier of auxiliary equipment for electrical furnace steelmaking. MORE designs, manufactures, installs and commissions advanced chemical energy technology packages and auxiliary equipment for steelmaking. MORE supplies a wide range of equipment: oxygen/natural gas valve stands, deep and soft carbon injectors, lime injectors EAF offgas analysis systems, water-cooled lance manipulators, consumable lance manipulators, burner systems, automatic temperature/sampling manipulators, remote-controlled systems to clean slag door tunnel, EBT area auxiliary equipment, carbon/lime pneumatic transportation systems. Visit our booth for the latest innovative technologies to improve

steelmaking productivity, cost savings and operator safety.

### Morgan Engineering Systems Inc.

[www.morganengineering.com](http://www.morganengineering.com)

Morgan Engineering designs, manufactures and remanufactures a wide range of custom overhead and gantry-type cranes, along with other mill equipment, such as transfer cars, ladles, scrap buckets and most large fabrications. When choosing Morgan Engineering, customers rely on the skill, experience and commitment to customer satisfaction that comes from more than 140 years in business.

### MTUS Technology Inc.

<http://mtag-technology.com>

MTUS Technology is an international corporation specializing in consulting, engineering, and the development of innovative, efficient, modernized solutions for the steel industry. We are an ambitious, customer-oriented company that is committed to providing our clients with safe, reliable, environmentally responsible and sustainable solutions of the highest quality. MTUS Technology specializes in complete turnkey solutions for steel vacuum degassing, offering a range of secondary metallurgy equipment, including: VD, VOD, VCD, VMD, VOH, RH, ladle treatment stations, and oxygen and carbon injection systems. Now supplying automatic safe argon gas hookup, safe temperature and sampling systems, manipulators, and robotic systems.

### Nalco, an Ecolab company

[www.nalco.com](http://www.nalco.com)

Nalco, an Ecolab company, is a leading provider of water treatment chemicals and services to the global iron and steel industry. We offer a wide range of solutions to help our customers reduce costs and improve productivity in an environmentally responsible and sustainable manner. Our systematic approach to reducing total cost of operation focuses on improving overall plant economics by optimizing





efficiency, reducing unscheduled downtime, increasing asset life and improving product quality.

### NCCM Co.

[www.nccmco.com](http://www.nccmco.com)

NCCM Co. manufactures premier mill rolls used by primary metal processors and the automotive market. NCCM® Neutral, CX Series and RK Mill Rolls are the only mill rolls made of 3M material, and they set an industry performance standard. The NCCM Neutral Mill Roll is known for its distinctive yellow color and its exceptional wringing performance. CX and CX-Plus Series Mill Rolls are ideal for use with harsh caustic and acidic chemistries such as electrolytic lines or on pickling, caustic cleaning or coil coating lines. The NCCM RK Series Mill Roll is used with

large-diameter metal coils in some of the most demanding operations. NCCM's new product technologies help processors improve productivity and reduce costs and the environmental impact of metal processing.

### NDC

[www.ndc.com](http://www.ndc.com)

NDC offers a complete range of metals systems to measure flatness, width, thickness and coatings across a wide range of metals applications. With more than 60 years of metals product experience, NDC is introducing a totally distributed intelligent architecture for their metals systems. Based on the TDI architecture that has been proven on thousands of different processes and applications since 2006, this platform offers reduced system complexity, high reliability and

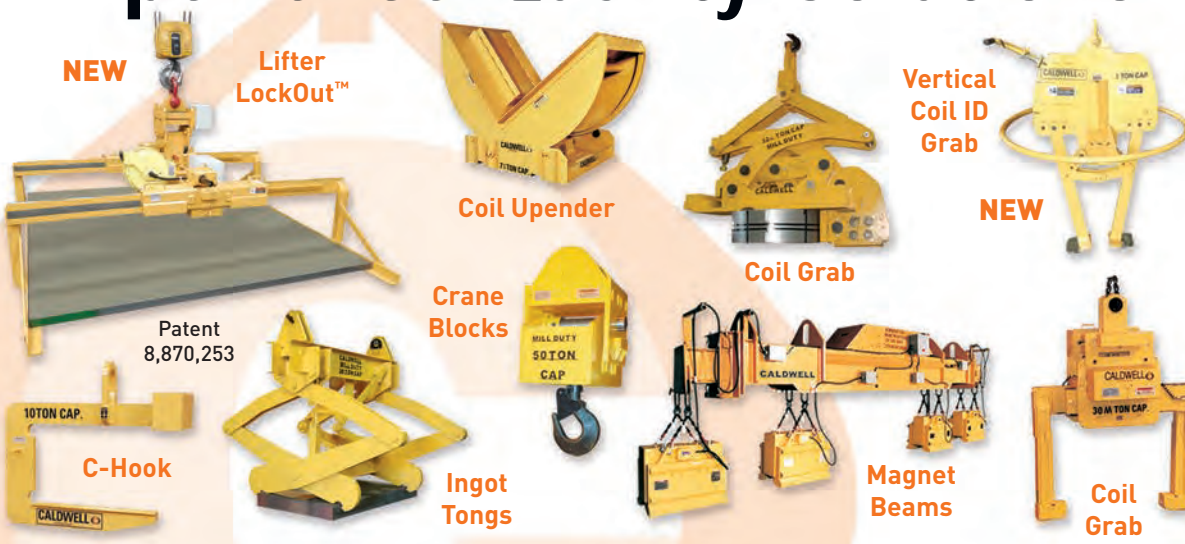
low installation costs. It has fewer components and interconnections, resulting in lower operating costs. The system is malware resistant, eliminating the need for antivirus software and regular upgrades. Visit our booth at AISTech 2015 or contact us at [www.ndc.com](http://www.ndc.com).

### NICRO S.p.A.

[www.nicro.it](http://www.nicro.it)

Nicro S.p.A. specializes in the fabrication of a wide range of components for different industrial applications in high-grade stainless steel alloys. Nicro offers an extensive production program and tailor-made solutions to suit customers' specific requirements, operating in the frame of the ISO 9001:2008 quality system. Significant investments were made in a new plant, inaugurated in 2013, and

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state-of-the-art machines for the processing of alloy steel plates: 3D laser machines, plasma cutting and welding, and orbital welding. Nicro has focused its research in recent years on the development of a new line of products: radiant tubes for the latest continuous annealing and galvanizing lines. The goal of this research is to match the need to achieve higher temperatures and output volumes and keep energy and emissions in control.

### Nidec Industrial Solutions

[www.nidec-avtron.com](http://www.nidec-avtron.com)

Nidec Industrial Solutions (including Nidec Avtron Automation and Nidec-ASI) has a long history of drive systems installations, including electrical automation solutions, process diagnostic data acquisition systems and heavy mill-duty encoders. Nidec Industrial Solutions provides extensive experience in drive, automation, and feedback systems for ironmaking, steelmaking, casting, rolling mills, strip processing lines and crane applications. Nidec Industrial Solutions offers a range of automation products and solutions, including: DC, AC low- and medium-voltage drives, AC and DC motors up to 50,000 hp, integrated systems, PLCs and HMIs, level 1 and 2 automation, process models, mechanical mill modifications, field service and training, and much more.

### NILCO

[www.nilco.net](http://www.nilco.net)

National Industrial Lumber Co. (NILCO) specializes in packaging and dunnage lumber for shipping and crating. NILCO has 10 locations in the U.S. and has been serving the country for 100 years. People are the strength of NILCO. Success remains dependent on our ability to build confidence in the products and services our customers need most, resulting in our relentless pursuit of measurable profit opportunities for our customers. NILCO inventories large amounts of hardwood blocking lumber and timbers for blocking and dunnage applications for shipping. We are certified to heat treat lumber and pallets to meet the ISPM 15 export regulations.

Visit us at [www.nilco.net](http://www.nilco.net) or call us toll-free at +1.800.444.9352.

### Nord-Lock/Superbolt

[www.nord-lock.com](http://www.nord-lock.com)

The Nord-Lock Group is a world leader in bolt-securing systems. Our unique combination of innovative products and expertise enables us to solve the toughest bolting challenges. With a wide range of solutions, including wedge-locking technology and Superbolt tensioners, the Nord-Lock Group looks forward to being your partner in bolt optimization. Superbolt multi-jackbolt tensioners eliminate unsafe and time-consuming bolting methods. They replace or retrofit existing nuts and bolts, and require only hand/air tools for installation and removal, regardless of size. Nord-Lock wedge-locking washers secure bolted joints exposed to severe vibration and dynamic loads. The lock washer system cannot loosen unintentionally, as it creates a wedge underneath the bolt head/nut. An ideal solution for bolted joints where fastener failure is not an option.

### North American Crane Bureau Inc.

[www.cranesafe.com](http://www.cranesafe.com)

North American Crane Bureau Inc. (NACB) is a widely respected, full-service safety training provider, specializing in the field of heavy lift equipment operator, inspector and supervisory safety training. NACB Interactive Educational Systems Inc. also manufactures and sells crane training simulators, two of which — the mobile telescopic and the overhead bridge crane simulator — will be showcased at AISTech 2015.

### Northrop Grumman Information Systems

[www.opentrac.com](http://www.opentrac.com)

OpenTrac™, a Northrop Grumman business unit, offers enterprise resource planning (ERP) software, supply chain management software, and electronic data interchange (EDI) translation (eCommerce) service for steel, aluminum, copper or specialty

metal manufacturers. Our products and services include:

- OpenTrac Director — An end-to-end supply chain optimization management software system for process owners, brokers and distributors to manage their supply chain.
- OpenTrac Enterprise — Advanced ERP solution for metal producers, processors, service centers and commodity warehouses.
- OpenTrac Coordinator — Cost-effective ERP solution for small manufacturers and service centers.
- OpenTrac Manager — An ERP solution for commodity and bulk warehousing and inventory management.

### NSD Corp.

[www.nsdcorp.co.jp](http://www.nsdcorp.co.jp)

At NSD, our customers' needs come first. NSD is a global manufacturer and supplier of absolute position sensors and related devices. Our sensors are used in a wide range of applications, including: casters, hot mills, steel and iron producing, cold mills, structural mills and wire mills. The performance and reliability of NSD heavy-duty sensors are unmatched. NSD's absolute position sensor, ABSOCODER, is an electro-mechanical sensor that measures the angular position or motion of a shaft by detecting the change in magnetic reluctance. Its design and construction eliminate all internal electronics, optics component and contact parts. NSD is committed to continual improvement to give you the most reliable product in the industry.

### NSK Americas

[www.nskamericas.com](http://www.nskamericas.com)

NSK provides bearing design technologies that reduce contamination and debris, operate in poorly lubricated environments and perform under heavy loads at ultralow speeds. Our reliable products for rolling mills, which include NSK housings, solid lube, work roll and SWR™ Series spherical roller bearings, are supported by NSK's Asset Improvement Program (AIP). Unlock additional profitability by working with NSK

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[www.ntnamericas.com](http://www.ntnamericas.com)

NTN manufactures and supplies the most comprehensive range of bearings, constant velocity joints, and other precision industrial and automotive equipment to meet a variety of applications across many different industries. As the world's third-largest bearing manufacturer, we have more than 68 plants worldwide and nearly 100 years of premium quality to our name.

### Nuttall Gear

[www.nuttallgear.com](http://www.nuttallgear.com)

Nuttall Gear supplies the steel industry with a wide variety of gear drives. Applications include combination reducer/pinion stands, separate pinion stands, pinch roll drives, flattener drives, and single- and multi-speed recoilers and uncoilers. We will custom design and manufacture units to your requirements or we will manufacture them to your design. We combine our extensive application experience and CAD technology to produce reliable enclosed gear drives for all of your steel processing requirements. The service division of Nuttall Gear/Delroyd Worm Gear provides comprehensive services designed to keep your rotating machinery in operation. Nuttall also provides extensive field services for your equipment, including laser alignment, failure analysis, upgrades and repairs.

### Oerlikon Leybold Vacuum

[www.oerlikon.com/leyboldvacuum](http://www.oerlikon.com/leyboldvacuum)

Oerlikon Leybold Vacuum's line of vacuum pump systems is designed for use in steel degassing applications, such as vacuum induction melting,

vacuum arc remelting, vacuum degassing, vacuum oxygen degassing, as well as various vacuum heat treatments. We will feature new pump lines, including the DRYVAC® dry compression vacuum pumps and RUVAC® WH vacuum boosters. Oerlikon Leybold Vacuum can design, configure and install a complete turnkey vacuum system, including pumps, boosters, interconnecting piping, valves, filters and electrical control. For more information, visit [www.oerlikon.com/leyboldvacuum](http://www.oerlikon.com/leyboldvacuum) or [www.leyboldchampion.com](http://www.leyboldchampion.com), or contact Mario Vitale at +1.800.764.5369, [mario.vitale@oerlikon.com](mailto:mario.vitale@oerlikon.com).

### Ohio Magnetics Inc.

[www.ohiomagnetics.com](http://www.ohiomagnetics.com)

Ohio Magnetics Inc. is a world leader in the development of lifting magnet systems and Stearns™ magnetic separation equipment for the steel, steel service, scrap processing, recycling, mining, foundry and railroad industries. Ohio Magnetics Inc. manufactures standard and specialized circular, bipolar and rectangular lifting magnets for ferrous processing applications. In addition, Ohio Magnetics produces ancillary power equipment, including DC rectifiers, DC generators, battery backups and magnetic controls. With a complete full-service repair facility, we can rebuild any type of magnet to the original specifications. Our advanced magnet systems are performance engineered for peak production and reliable, long-term service.

### Oil Skimmers Inc.

[www.oilskim.com](http://www.oilskim.com)

For more than 45 years, Oil Skimmers Inc. has been a leader in the field of waste oil removal. We manufacture and market automatic oil skimming equipment, specializing in recovering all types of floating waste oils, greases and fats from the surface of water and other liquids. When it comes to separating oil from water for recovery and recycling, companies around the world have utilized our floating tube oil skimmers. Our Model 6V and Model 5H Oil Skimmers are found in

tens of thousands of the most diverse and demanding applications. They do their job of picking up waste oil day after day, year after year, with virtually no supervision or maintenance. We invite you to learn more about us and how we can craft a solution to meet your needs.

### Orival Water Filters

[www.orival.com](http://www.orival.com)

Orival filters are proven in the filtration of cooling water for continuous casting, hot rolling, cold rolling and non-ferrous metal production. Remove scale, airborne particles, sand, silt, etc. from recirculated and once-through water, which can cause quality problems such as black digs. Provide reduction in maintenance and operating costs by protecting spray nozzles from clogging. Unlike sand filters, Orival filters are unaffected by the presence of oil in the water. Filters clean themselves automatically while providing uninterrupted flow of water to the process. Individual filters up to 12,000 gpm; unlimited flowrate capability. ASME U-Stamp, oil-resistant, high-temperature units available. Come see us at AISTech 2015 or visit [www.orival.com](http://www.orival.com).

### Osborn

[www.osborn.com](http://www.osborn.com)

Osborn supports mills across the globe with a full range of brushes and wide-face furnace rolls, as well as the Load Runners line of heavy-duty idler rollers and rail systems. Osborn's global network of design engineers and sales/customer support come together to provide custom, innovative material handling solutions for customers in 24 countries.

### OTC Services Inc.

[www.otcservices.com](http://www.otcservices.com)

With experience dating back to the 1970s, OTC Services Inc. is committed to the remanufacturing and repair of dry-type and liquid-filled transformers for both industrial and utility clients. Our 98,000-square-foot facility in Louisville, Ohio, streamlines the process and allows aggressive



lead times by providing dedicated rail access, large truck delivery and a 100-ton crane for loading and unloading. At OTC Services, we employ our own on-site engineers and utilize only the highest-quality materials for maximum renewal of your transformer life cycle. Do business with us and be guaranteed the proper assessment, management and execution of your transformer remanufacturing project or repair.

### Oxford Instruments

[www.oxford-instruments.com](http://www.oxford-instruments.com)

Oxford Instruments is a leading provider of high-technology instruments for materials identification essential for quality control and safety compliance. Our instruments are used around the world for materials analysis and coating thickness gauging. Oxford Instruments offers a complete

line of solutions for positive materials identification through proven technologies such as x-ray fluorescence, optical emission spectroscopy and laser-induced breakdown spectroscopy to offer real-time analysis in the lab or out in the field. Our instruments are used worldwide throughout industrial plants as well as within the metal assembly and component manufacturing industries to streamline processes and provide cost savings associated with third-party testing. Visit our expert team at AISTech 2015 or email [industrial@oxinst.com](mailto:industrial@oxinst.com).

### Oxy-Arc International Inc.

[www.oxy-arc.com](http://www.oxy-arc.com)

Oxy-Arc International Inc. specializes in the production of oxy-fuel cutting equipment. We offer torch cutting systems, billet/bloom/slab casters torch cutoff machines, and additional

upstream and downstream capital goods. In addition to caster cutoff systems, we supply off-line dimensioning and scrap cutting machines, as well as strip processing lines. Ladles, slag pots, tundishes, forgings and rollers are also available. Our heavy cutting capacity now stands at up to 2,500 mm (98 in.). Additional products include cutting tips, machine torches, handheld cutting/scarfing, protective apparel and gas safety equipment, and more. From large-scale new caster installations to the smallest handheld cutting tasks, we can provide the products and services you need.

### Oxylance

[www.oxylance.com](http://www.oxylance.com)

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### Pacific Consolidated Industries

[www.pci-gases.com](http://www.pci-gases.com)

PCI is a global leader in the design and manufacture of on-site oxygen and nitrogen generators for a variety of markets, including iron- and steelmaking, water and wastewater treatment, medical, industrial, military, and oil and gas markets. PCI's Vacuum Swing Adsorption technology offers the lowest operating cost and most reliable oxygen generator in its class, all in a turnkey system. PCI has established an excellent reputation for its innovative, patented, problem-solving engineering approaches, its introduction of state-of-the-art technology and its outstanding product value. Our products enable our customers to produce oxygen and nitrogen at the point of use, saving time, money and the environment.

### Pannier Corp.

[www.pannier.com](http://www.pannier.com)

Marking steel since 1899, Pannier offers bar code metal tags for identification of hot steel, used by the largest steelmakers in the world. Industrial-grade metal tag printers print tags in seconds without the use of inks. Pannier also offers a wide range of products for printing and stamping on long and flat products. Specializing in system customization and integration for marking steel products in every stage of manufacture. Visit our booth at AISTech 2015 to see the latest in fast, reliable tag printing.

### Parker Hannifin Complete Piping Solutions

[www.completepipingsolutions.com](http://www.completepipingsolutions.com)

Parker Hannifin's Complete Piping Solutions (CPS) provides non-welded piping solutions for hydraulic, grease/lube, and process systems used in the production, processing and recycling of iron and steel. Parker's Parflange F37 system provides the technology foundation for delivering a clean, leak-free and efficient piping system. Through our global network of Parker Piping Centers, we provide streamlined piping fabrication, installation and commissioning solutions. Flexible project variables such as engineering, labor, flushing, field fabrication, pre-fabrication, etc., are managed with efficiency and safety in mind.

### Paul Wurth Inc.

[www.paulwurth.com](http://www.paulwurth.com)

Paul Wurth has been servicing the North American iron and steel industry for 30 years. Recently, Paul Wurth has joined the SMS group of companies. Paul Wurth's capabilities include ironmaking, cokemaking and steel mill waste recycling technology, with a full range of services, including feasibility studies and engineering to supply equipment and installation support services. Paul Wurth opened a North American service center in Valparaiso, Ind. The newly established service center can provide a broad assortment of shop services, including disassembly and inspection assessment, shop repair refurbishment, equipment performance assessments, on-site repair, major maintenance assessment and valued-added engineering support.

### Perfection Servo

[www.perfectionservo.com](http://www.perfectionservo.com)

Perfection specializes in the repair of hydraulic and electronic components. Since 1979, we have provided superior service to domestic and international manufacturers from every industry imaginable. The growth and success of Perfection is due to the partnership that forms between our customers and employees, and at the core is trust. We understand the importance of the

equipment we service. Not only do our repairs enable a steady stream of production, but they can also mean a profitable quarter, a good night's sleep or preservation of someone's livelihood. The employees at Perfection understand this responsibility, and do not take it lightly. It is this commitment to the customer that creates trust, and it is that trust that keeps our customers coming back.

### Pfeiffer Vacuum

[www.pfeiffer-vacuum.com](http://www.pfeiffer-vacuum.com)

Pfeiffer Vacuum is a turnkey design and manufacturing company building pumping systems for steel and other metal degassing and vacuum furnaces. Experience in RH, VD and VOD applications. Pfeiffer Vacuum manufactures all of the equipment needed to provide a complete pumping system or individual components and leak detection equipment for qualifying the system for processing. Pfeiffer Vacuum's gas-cooled Okta G Series pumps are ideally suited for degassing applications where the pumps must operate at elevated pressure and quickly evacuate large volumes. Okta G Series pumps decrease system complexity and improve reliability of the degassing vacuum system.

### PhyMet Inc.

[www.micropolylubricants.com](http://www.micropolylubricants.com)

PhyMet Inc., an ISO 9001:2008 registered company, manufactures MicroPoly<sup>®</sup>, a leading solid lubricant for bearings and sliding friction applications. MicroPoly solid lubricants are a mixture of polymers, oils and select additives. Our patented MicroPoly Lube Arcs for overhead cranes will be featured at AISTech 2015. MicroPoly Lube Arcs have proved to dramatically reduce wear on overhead crane wheel flanges. PhyMet's R&D department has led the solid lubricant industry in developing new, innovative, high-performing products. These innovations were driven by the demands of our customers for higher efficiencies and longer performance life. MicroPoly solid lubricants can be used to lubricate bearings, chains, gears, bushings, wear plates, wheel flanges and ball screws.



## **Pintsch Bubenzer USA**

[www.pintschbubbenzerusa.com](http://www.pintschbubbenzerusa.com)

Pintsch Bubenzer is a global supplier and manufacturer of industrial braking systems and brake components for material handling applications within the container handling, mining, steel, shipboard equipment and wind power industries. Pintsch Bubenzer's products include disc, drum, band and storm brakes, as well as monitoring systems for braking applications. With nearly 80 years of experience and production in four global facilities, Pintsch Bubenzer has developed an expertise in the design, testing and implementation of braking systems worldwide. Pintsch Bubenzer USA is also the North American marketing partner for Malmedie drum, gear and safety couplings for heavy-duty, industrial applications.

## **PKG Equipment Inc.**

[www.pkgequipment.com](http://www.pkgequipment.com)

PKG Equipment designs, fabricates and installs process equipment for the rod and wire, tube, metal, specialty steel and hot-dip galvanizing industries, including thermoplastic and metal tanks. Tanks may be ASME code or non-code. Tank liners, ventilation systems and complete lines for galvanizing, pickling, cleaning and plating are also available. PKG Equipment is a certified industrial applicator of Rhino Industrial Linings spray-on polyurethane liners. These linings have a high level of chemical resistance while still protecting against impact, abrasion and corrosion. In addition, we are licensed applicators of Koroseal tank linings and can modify or repair your existing equipment.

## **Plattco Corp.**

[www.plattco.com](http://www.plattco.com)

Plattco double-flap airlock valves — economically and operationally better than rotary valves. Plattco invented the double-flap valve in 1958 as a rotary valve alternative. Today, many are purchased in place of rotary valves, resulting in less maintenance and improved productivity. Plattco provides a long-term solution to rotary

valve wear and jamming. The body of the valve is not a sealing surface. The seats and flappers, which provide the critical seal, are cast and machined of wear-resistant alloys. They can be replaced quickly and easily without disassembling the valve or taking it out of line. These long-life units are designed to provide many years of maintenance-free service. Our valve designs eliminate bridging and clogging to maximize operating efficiency.

## **Polytec Inc.**

[www.polytec.com](http://www.polytec.com)

Polytec's line of LSV laser length and speed sensors are specifically designed to deliver precise, reliable measurements for advanced process control, process optimization, improved quality and increased yield. The LSV offers a comprehensive range of sensor systems and accessories to enable optimal configuration for the specific application requirements. They provide length and speed solutions for many applications throughout the steel process. With more than 20 years of experience in the industry, customers have come to rely on Polytec to supply advanced, reliable technology in a rugged, mill-duty package, while providing the attention to customer support, responsible for building long-term business partnerships.

## **POSCO E&C**

[www.poscoenc.com](http://www.poscoenc.com)

POSCO E&C has provided all kinds of steel plants for more than four decades, as well as project planning, engineering, procurement, construction, and operation and maintenance services within both schedule and budget. With its rich background rooted in numerous projects managed both in and outside of Korea and its extensive expertise in providing and modernizing steel plants and ensuring lifelong competitiveness, POSCO E&C is the best partner for your global steel plant projects. POSCO E&C continues to secure essential capabilities for each process, including the development of independent designing ability. Customers will experience greater satisfaction as the company

further strengthens its core technologies and expertise.

## **Power Asset Recovery Corp.**

[www.power-asset.com](http://www.power-asset.com)

Power Asset Recovery Corp. (PARC) is one of the largest dealers in the world for new surplus/used reconditioned distribution, regulators, rectifiers, furnace and power transformers up to 950,000 kVA, 500 kV. We have an extensive stock of transformers that we own and transformers on consignment from utilities and industrial customers. We also have transformer parts in stock, including new/unused transformer bushings up to 500 kV and related substation components. Link up with the experts for all your transformer needs and repair services. Visit [www.bigpowertransformers.com](http://www.bigpowertransformers.com).

## **Power Electronics**

[www.peinfo.com](http://www.peinfo.com)

Power Electronics International Inc. manufactures the only +60°C mill-duty controls designed specifically for overhead cranes and hoists. AC Smooth-Move® single- and two-speed soft-starts with patented Arc-Elimination, Micro-Speed® Smart-Move™, CX™ and Multi-Vector™ PWM AC variable speed drives featuring easy Gang-Set™ programming and 300% overcurrent capacity. Complete hoist, trolley, bridge and monorail control panel solutions available. Contact us at [www.peinfo.com](http://www.peinfo.com) or +1.800.362.7959.

## **Powerohm Resistors**

[www.powerohm.com](http://www.powerohm.com)

Powerohm manufactures a complete line of dynamic braking resistors and dynamic braking modules, as well as stepped resistive controls for AC/DC motor applications. Powerohm products for the power industry are world renowned and include: neutral grounding resistors, high-resistance grounding pulsars and high-voltage harmonic filter resistors.

**Praxair Inc.**[www.praxair.com](http://www.praxair.com)

In addition to a broad array of industrial gases, Praxair offers a wide range of innovative technologies and services for the global metals industry. These include our patented CoJet™ gas injection system, argon oxygen decarburization (AOD) process used to produce more than 75% of the world's stainless steel, stove oxygen technology, and dilute oxygen combustion (DOC) for steel reheating — the winning technology of the 2010 AIST Energy Achievement Award. Visit us for the latest steelmaking technologies.

**PRC Inc.**[www.prckorea.kr/eng/main/main.php](http://www.prckorea.kr/eng/main/main.php)

As a general trading company, PRC was founded in 2007 and has regularly been supplying refractories to the Korean market based on our business relationship with foreign companies.

**PREET Machines Ltd.**[www.pmpgrupo.mx](http://www.pmpgrupo.mx)

PREET Machines Ltd. conducts technical feasibility studies for the modernization of existing hot rolling mill plants as well as installation of individual components for rebar rolling mills, TMT bar mills, wire rod block rolling mills, section rolling mills and alloy steel rolling mills. Our in-house facilities produce an array of hot rolling mill and long products. Our hot rolling mill services include:

- TMT bar mill and wire rod rolling mill up to 500,000 tons/year.
- Customized light-, medium- and heavy-section rolling mill up to 500,000 tons/year.
- Rolling mill stands for hot rolling mill plants up to 1,000 mm.
- Wide range of gears up to 4,000 mm.
- Speed reduction gearboxes up to 6,000 kW.
- EOT cranes up to 100-ton capacity.
- Hardened and ground gears and gearboxes up to 2,000 mm.
- AOD converter shop and LD converter shop.

**Primetals Technologies U.S.A. Holdings Inc.**[www.primetals.com](http://www.primetals.com)

Primetals Technologies U.S.A. Holdings Inc. is a joint venture between Mitsubishi Heavy Industries and Hitachi, in addition to the recently integrated IHI Metaltech Co. Ltd., and provides state-of-the-art technologies for the flat rolling and strip processing industries. The company's leading technologies can be viewed at the booth through a video presentation, photos, computer animations and brochures. Featured processes include new flat rolling technologies, such as a pair-cross hot strip mill, an on-line roll grinding and crown control system, highly integrated shape control 6-high mills, advanced pickling and galvanizing lines for high-strength automotive steels, and aluminum/non-ferrous rolling mills.

**Primetals Technologies USA LLC**[www.primetals.com](http://www.primetals.com)

Primetals Technologies, headquartered in Frimley, Camberley, U.K., is a leading engineering, plant-building and life cycle partner for the metals industry. The company offers a complete technology, product and service portfolio that includes the integrated electric, automation and environmental solutions. This covers every step of the iron and steel production chain that extends from the raw materials to the finished product — in addition to the latest rolling solutions for the non-ferrous metals sector. Primetals Technologies is a joint venture of Mitsubishi Heavy Industries (MHI, 51%) and Siemens (49%). The company employs around 9,000 employees worldwide. Further information is available at [www.primetals.com](http://www.primetals.com).

**ProcessBarron**[www.processbarron.com](http://www.processbarron.com)

ProcessBarron is a leader in the design, manufacture and installation of heavy equipment for the aluminum, cement, pulp and paper, steel and utility industries. Products include mechanical draft fans (new, repair and upgrade),

solid fuel and ash handling equipment, control and isolation dampers, dust collectors, expansion joints and specialty fabrications. We are a “total systems solution” company with field construction capabilities.

**ProMinent Fluid Controls Inc.**[www.prominent.us](http://www.prominent.us)

ProMinent Fluid Controls Inc. is a global manufacturer of chemical metering pumps, water quality instrumentation, specialized disinfection equipment, and pre-engineered or custom skidded systems serving the water and wastewater industries. ProMinent has proudly served the industrial, municipal, aquatics and OEM markets in the United States for more than 30 years.

**Proto Manufacturing**[www.protoxrd.com](http://www.protoxrd.com)

Residual stress directly affects fatigue life, distortion, crack initiation, crack growth rates, stress corrosion cracking, and hydrogen-induced cracking in iron or steel components and structures. For more than 30 years, Proto has provided leading-edge XRD measurement systems and residual stress measurement services in our labs or at your plant. We can quantitatively and non-destructively track the buildup of residual stress in steel mill rolls. The data can be used to optimally and proactively maintain the rolls prior to expensive in-situ failure. Our laboratory and field services are ISO 17025 certified and ITAR registered. Proto Manufacturing is located in Taylor, Mich. Contact us at +1.800.965.8378, [proto@protoxrd.com](mailto:proto@protoxrd.com) or [www.protoxrd.com](http://www.protoxrd.com).

**Pruftechnik Service Inc.**[www.pruftechnik.com](http://www.pruftechnik.com)

Pruftechnik has been providing high-tech measuring systems for industrial maintenance and quality assurance since 1972. Our award-winning products have become standard equipment in many sectors of industry and high-end maintenance services worldwide. The U.S. location offers precision roller alignment service using





the PARALIGN® system, as well as additional services for a total machinery service package. Benefits of the PARALIGN system:

- Measures complete machines up to 10 times faster without a need for a line of sight.
- Easy-to-understand graphical report generated instantly.
- Trouble spots causing tracking, baggy edge, and cresting issues are easily identified and corrected.
- One-time setup per service.
- Ideal for sheet metal process equipment.

### PSI Metals North America Inc.

[www.psimetals.com](http://www.psimetals.com)

Intelligent software for the production of steel, aluminum and other metals is our core business. PSI Metals' software solution optimizes processes to increase throughput, increase profit and yield, manage inventory, and improve quality and due date adherence. With more than 45 years of experience, PSI is a leader for production management solutions in the metals industry. The complex and diverse processes in metals production are fully reflected in PSI Metals software. With intelligent solutions for planning, manufacturing execution, logistics, quality, scheduling, energy, automation and plant optimization, we secure competitive advantages for our customers in their markets. We serve all process levels of metals production.

### PT TECH

[www.pttech.com](http://www.pttech.com)

PT Tech, located in Sharon Center, Ohio, is a leading manufacturer of a complete line of friction torque limiters and brakes for extreme steel mill use. Known for exceptional quality and long-lasting performance, our products are on equipment in the world's toughest environments:

- Mining.
- Off-highway.
- Recycling.
- Heavy construction.
- Steel.
- Aggregates.

- Roadworking.
- Marine/dredging.
- Wind.

We'll provide an effective solution — whether you utilize one of our current products or require a custom-engineered solution. We'll serve as an extension of your engineering team. Contact us today to help improve your application!

### Purdue University Calumet

[www.purduecal.edu/civs](http://www.purduecal.edu/civs)

The Center for Innovation Through Visualization and Simulation (CIVS) is a multi-disciplinary center that combines advanced simulation techniques with 3D visualization and virtual reality technologies. CIVS has been globally recognized by its integrated and application-driven approaches through the state-of-the-art simulation and virtual reality visualization technologies for providing innovative solutions to solve various university research problems, industry issues, as well as education and community problems. Through close partnerships with more than 80 external organizations, CIVS's projects have provided substantial educational and economic impacts, resulting more than US\$38 million for companies. Additional information on CIVS can be found at [www.purduecal.edu/civs](http://www.purduecal.edu/civs).

### Pyro Shield Inc.

[www.pyroshield.com](http://www.pyroshield.com)

Featuring high-temperature insulation, gaskets, furnace modules, removable high-temperature insulation pads. Non-ceramic, non-asbestos.

### Pyrotek Inc.

[www.pyrotek.info/isomag](http://www.pyrotek.info/isomag)

Pyrotek Inc. is a leading international refractory and service supplier. Pyrotek's ISOMAG™ brand structural boards have revolutionized iron and steel vessel insulation. This dense material offers both excellent thermal insulation and superior strength and dimensional stability at high temperatures and over long service periods. ISOMAG keeps its thermomechanical and structural properties during its full service life, providing long lining

life. The lining stability provided with ISOMAG also generates a more stable and predictable process, thanks to a steady, consistent control of the molten metal temperature over time. Visit our booth for a demonstration. For further details, contact us directly: [customerservice-isomag@pyrotek-inc.com](mailto:customerservice-isomag@pyrotek-inc.com) or +1.819.477.0734.

### Quaker Chemical

[www.quakerchem.com](http://www.quakerchem.com)

Since the 1930s, Quaker has been a major supplier of process fluids and other chemical specialties to all of the biggest names in steel. Now, we're bringing even more to the field with a completely integrated range of products and services for the steel mill, from beginning to end. Whether it's casting, hot or cold rolling, cleaning, tempering, corrosion protection or surface treatment, Quaker has innovative, integrated process solutions and superior service to optimize your operations and increase profitability. Quaker associates have the experience in application and a deep understanding of the installed base of equipment. No matter what challenges your operations face, Quaker is there to help turn hard work into a new level of success.

### Qual-Fab Inc.

[www.qual-fab.net](http://www.qual-fab.net)

Qual-Fab Inc. has manufactured stainless and high-nickel-alloy products, as well as mild steel fabrications, for the steel industry for more than 30 years. Our main products include inner covers of all styles, including the latest designs for use in pure hydrogen atmospheres. We also produce radiant heater tubes (both cast and wrought), furnace rolls, recuperator tubes, pickle hooks, cooling tubes, forced cooler assemblies, and many styles of convector plates, charge plates, diffusers and plenum chambers. We offer quality products at very competitive prices. Visit our website for more information.

**RAD-CON Inc.**[www.rad-con.com](http://www.rad-con.com)

Meet RAD-CON's annealing specialists at our booth at AISTech 2015. RAD-CON's main product is 100% hydrogen bell-type annealing equipment, along with the necessary process expertise to set up the plant. Combined with CAPS™ optimization software, RAD-CON's 100% Hydrogen Super-High Convection™ (H2SHC™) annealing equipment provides some of the world's best batch annealing performance. Since 1966, RAD-CON has partnered with annealers globally to increase batch annealing furnace capacities of high-quality ferrous and non-ferrous strip. Hundreds of RAD-CON bases reliably and efficiently process millions of tons of metal annually. RAD-CON is headquartered in Cleveland, Ohio. Visit us on the Web at [www.rad-con.com](http://www.rad-con.com).

**RAMON Science & Technology Co. Ltd.**[www.ramon.com.cn](http://www.ramon.com.cn)

RAMON Science & Technology Co. Ltd. specializes in the development and manufacture of automatic measurement and control technology in steelmaking and continuous casting process, with 20 years of experience in the metallurgical field. RAMON's headquarters are located in Hengyang, China, with a new product development base in Changsha and a national post-doctoral research station in Beijing. Nearly 500 employees work for RAMON, and the annual turnover keeps growing by 35% annually.

**Rapid Gear**[www.rapidgear.com](http://www.rapidgear.com)

Rapid Gear is your premier source for custom gears, gearboxes and gearbox repairs. Since 1976 we have grown to become a fully integrated gear and machinery manufacturer. With in-house engineering, skilled tradesmen and late-model machinery, we can meet your most demanding requirements. Gear cutting to 200-inch maximum diameter, gear grinding to 52-inch maximum diameter. Whether it be an emergency repair or design,

production and delivery of a new gearbox, discover why so many call Rapid Gear first.

**REA JET**[www.reajetus.com](http://www.reajetus.com)

REA JET US is a subsidiary of REA Elektronik GmbH, which, for more than 30 years, has been a leader in the development, design and manufacture of industrial coding and marking systems. Designed and manufactured at our global headquarters in Frankfurt, Germany, our complete range of products offer contact-free industrial coding and marking from one source. REA JET's product range includes: large-character ink-jet printers, high-resolution ink-jet printers, small-character ink-jet printers, laser systems, spray marking systems and labeling systems. REA JET systems allow you to print text, linear bar codes, DataMatrix codes, logos, product information, best-before dates, batch numbers, and data for tracking and quality assurance.

**Regal Power Transmission Solutions**[www.RegalPTS.com](http://www.RegalPTS.com)

Like New for Less.... For more than 90 years, KOP-FLEX continues to be a leader in providing power transmission coupling field and repair services in North America. With a global network of centers and personnel, we can handle any coupling, any time, anywhere in the world. Check out our "Like New for Less" on display at our booth. Rollway was the first bearing company to offer vacuum degassed steel and crowned rollers on all standard products. Today, Rollway is still manufacturing some of the highest-quality bearings obtainable. Our components are made from the finest bearing-grade steel available. Visit our booth at AISTech 2015 to learn more about our Kop-Flex and Rollway brands and our solutions to help you save money!

**Reichard Industries LLC**[www.reichardind.com](http://www.reichardind.com)

Reichard Industries LLC, a complete heavy-equipment manufacturer and

repair facility primarily for the steel industry, takes great pride in more than 30 years of offering the highest quality standards, custom design, competitive pricing and on-time delivery. Whether you require new or rebuilt equipment, our 130,000-sq.-ft. facilities offer plate burning, plate forming and rolling, stress relieving, vertical boring mills, welding positioners, and 75-ton crane capacity. We specialize in hot metal cars, ladles, clamshell scrap buckets, transfer cars, blast furnace bells and hoppers, rotating distributors, and more. We also offer on-site inspection and repairs for ladles and hot metal cars. Main offices are located in Columbiana, Ohio. Stop by and meet the Reichard team.

**Renold Torque Transmission**[www.renold.com](http://www.renold.com)

Renold Torque Transmission, a division of Renold Plc, is an industry leader in manufacturing and supply of power transmission products. Products include custom-designed gear spindles, universal joints, standard and custom gear couplings, custom and standard gearboxes, open gearing, worm gears, rubber tire couplings, spider couplings, disc couplings, fluid couplings, pin and bush couplings, elastomeric "rubber in compression" Hi-Tec couplings, sprag clutches, hold-backs and freewheels. The materials, heat treatment, gearing, and customized options are designed to achieve optimization of cost and performance based on the unique operating conditions of each application. Recondition programs are another way Renold can help you achieve better performance and longer life from your gear spindles and gearboxes.

**REXA**[www.rexa.com](http://www.rexa.com)

REXA has become a major international manufacturer of control valve actuators and damper drives. REXA is committed to exceeding customer expectations by continually developing new designs, processes and systems that provide the best products and service available. REXA engineers and manufactures self-contained electro-hydraulic actuator equipment



designed to meet the most challenging installations in the metals processing industry. Other industries that utilize REXA actuators include power generation, oil and gas transmission, water and wastewater, and general industries that require rugged, reliable, repeatable control.

### Rexnord Industrial Services

[www.theclineco.com](http://www.theclineco.com)

The Cline Co. can meet all of your universal joint driveshaft (cardan shaft) needs. We can repair, refurbish, or replace any style or brand of cardan shaft. We also offer engineered solutions. We specialize in maintenance, troubleshooting, inventory reduction and cost-advantage solutions. Our all-encompassing "Rapid Shaft" program blends all of these specialties into one package. The Cline Co. has more than 100 years of collective industrial

universal driveshaft experience in product engineering, customer service and on-site field service support. At The Cline Co., our people, our service and our parts make the difference. Make The Cline Co. your partner for all of your universal driveshaft parts, maintenance, service and repairs.

### RHC Deutschland GmbH

[www.rhcheavymachinery.com](http://www.rhcheavymachinery.com)

RHC is an international sales team for European and Asian manufacturers for transporters, cranes and special custom-made accessories for steel mills, shipbuilding and more. Also for some special requirements, RHC provides basic and detailed engineering, support for manufacturing and quality control, as well as international after-sales service. RHC's partners are top-ranking European

and Asian manufacturers, providing top-quality products of leading technology. RHC provides one of the most competitive packages on the global market in regard to quality, price and technology.

### RHI AG

[www.rhi-ag.com](http://www.rhi-ag.com)

RHI AG is a world market and technology leader in high-grade ceramic refractory materials. A global player with Austrian roots, RHI employs roughly 8,400 people worldwide at 33 production sites in Europe, North America, South America, India and China, and is represented by more than 70 sales offices on four continents.

## Seeking Agents!

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May 4-7, 2015  
Cleveland Convention Center  
Booth No. 3070



May 12-14, 2015  
Beijing International Convention Center  
Booth No. 504 & 505



June 16-20, 2015  
CCD Congress Center, Dusseldorf  
Booth D37-03, Hall 04

**Riise Inc.**[www.riiseinc.com](http://www.riiseinc.com)

Riise Inc. specializes in the supply of custom-engineered material handling systems for the metals industry. We are well-known for our robust, innovative designs. With more than 40 years of combined experience, we have a solution for your material handling needs. From manual to fully automated systems, we can provide a cost-effective system that will meet and exceed your specifications, without exceeding your budget. Our fabricating facility is located on the same campus as our headquarters and has the capability to perform the fabrication, machining, assembly, mechanical setup and full functional testing of your system prior to shipment, saving time during installation. Stop by our booth to discuss your material handling needs.

**Ritbearing Corp.**[www.ritbearing.com](http://www.ritbearing.com)

Ritbearing is an importer and wholesale distributor of a wide range of ball and roller bearings. Our efforts focus on educating our customers on the products offered by Ritbearing. We strive to develop solutions to current and future requirements, and securing long-term relationships with our customers. The staff at Ritbearing looks forward to learning more about your company and serving your bearing needs.

**R&MS Solutionpartner GmbH & Co. KG**

We at R&MS Solutionpartner are specialized in rolls and machine shops for your rolling mills. Located in Germany, we support all European market with our products, which include:

- Forged backup rolls.
- Cast work rolls.
- Forged work rolls.
- Roller bearings.
- Rolls measuring systems fully integrated to the roll grinder control or as hand-operated unit on the shop floor.
- Machine tool alignment measuring equipment.

Having the exclusive sales rights for the Forged BUR on the North American terrain, we would like to introduce EMSS as the specialist for forged backup rolls with the range of 10 tons up to 300 tons. In addition, we will present hand-operated saddle mikes with and without electronics and our unique technology for bed alignment measurements.

**Robinson Fans Inc.**[www.robinsonfans.com](http://www.robinsonfans.com)

Robinson Fans is a full-service solutions provider, manufacturing the highest quality and most reliable industrial fans for industries worldwide. We specialize in building custom-engineered and custom-designed fans to meet customers' exact needs. Robinson Fans thoroughly analyzes all of our customers' system requirements so we can provide cost-efficient solutions for each particular application, whether it is an industrial fan, damper, blower or exhauster. We offer more than 100 years of experience in building air movement solutions for various industries including power generation, mining, rock and carbon products, chemical, thermal treatment, ceramic, air pollution, biofuel, ferrous and non-ferrous metals, food processing, emerging processes and many others.

**RotaDyne**[www.RotaDyne.com/capabilities](http://www.RotaDyne.com/capabilities)

RotaDyne is a global leader in providing roller-related solutions to the metals industry. With headquarters and R&D operations in Chicago, Ill., and more than 30 roller manufacturing facilities around the world, RotaDyne designs, engineers, and manufactures a complete line of elastomeric and metal-covered rollers and sleeves to service all aspects of the metals rolling and finishing industry. From shapemeter rolls to wringer, squeegee and bridle rolls, to packaging line, slitter pinch and blocker rolls, the RotaDyne continuous improvement philosophy is founded in collaborative applications and reliability engineered solutions. The RotaDyne fleet of trucks provides pickup and

delivery services throughout the United States and Canada. Take a video tour of RotaDyne's capabilities at [www.rotadyne.com/capabilities](http://www.rotadyne.com/capabilities).

**RoviSys**[www.rovisys.com](http://www.rovisys.com)

Since its founding in 1989, RoviSys has become a leading independent provider of comprehensive process automation solutions and services. We bring expertise and resources to your project teams to deliver turnkey solutions throughout your operations. RoviSys delivers value to your company by consistently:

- Bringing to each initiative the vision and perspective required to imagine the most beneficial solution for your needs.
- Recommending effective combinations of technology and services to achieve that vision.
- Intently focusing on producing meaningful results. With more than 450 engineers, developers and project managers, RoviSys is an excellent choice for companies of all sizes looking for real solutions.

**Russula**[www.russula.com](http://www.russula.com)

Russula is a global engineering company serving the largest steel producers in more than 30 countries. With its headquarters and workshop located in A Coruña province, Spain, the company has major offices in Brazil, India, Italy, Mexico, Russia and the U.S. Russula has 27 years of steel industry experience. Our areas of operation are:

- Meltshops.
- Reheating furnaces.
- Bar/wire rod and section rolling mills.
- Water treatment plants.

Our strategy builds on our technical expertise to develop engineering solutions to help steel producers around the world:

- Increase steel production.
- Improve operational performance.
- Save energy.
- Reduce CO<sub>2</sub> emissions.



- Extend equipment life.
- Reduce operational costs.

### Samuel Strapping Systems

[www.samuelstrapping.com](http://www.samuelstrapping.com)

Samuel Strapping Systems manufactures and supplies a broad range of steel and plastic strapping, standard and custom-engineered unitizing equipment, and large turnkey packaging and unitizing systems. Samuel's comprehensive in-house research and engineering capabilities, with state-of-the-art CAD systems technology, offers customers complete packaging and unitizing solutions from a single source. Our products and systems can be found in virtually every industry.

### SANGRAF International

[www.sangrafinternational.com](http://www.sangrafinternational.com)

SANGRAF International is a fully integrated global manufacturer of premium graphite electrodes for the steel, ferrous and non-ferrous metal industries. With offices and manufacturing in major steel producing areas of the world, SANGRAF provides lean supply chain solutions, local support and dedicated service teams to deliver cost-effective, premium graphite electrodes optimized for electric arc furnaces. SANGRAF International has a global team of proven industry professionals to deliver exceptional value-added services along with its premium carbon and graphite electrodes. We specialize in reducing the total cost per ton of steel produced when using our premium graphite electrodes. Visit our website at [www.sangrafinternational.com](http://www.sangrafinternational.com).

### Sarclad North America L.P.

[www.sarclad.com](http://www.sarclad.com)

Sarclad is a global company headquartered in the United Kingdom with a sales and technical support base in the United States and China and representatives around the world. Sarclad has been supplying equipment to the steel and non-ferrous industries for more than 30 years. Sarclad is a leading supplier of EDT roll texturing equipment, roll inspection equipment and continuous caster strand monitoring equipment. They have developed

market-leading products by investing in research and development, understanding the industry, and providing reliable customer support.

### Sarralle USA Inc.

[www.sarralle.com](http://www.sarralle.com)

Sarralle USA Inc. recently opened an office just outside of Pittsburgh, Pa. Sarralle USA Inc. provides

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SANGRAF International provides:

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- Creative Supply Chain Solutions
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engineering and equipment supply solutions for modern steel plant meltshops. We provide solutions for electric arc furnaces, fume exhaust systems, and secondary metallurgy equipment, including LFs, VDs and VODs. Also included in our portfolio are continuous casting machines, material handling systems, auxiliary equipment, electrics and automation, and substation and HV switchgear. Services include metallurgical assistance, supervisory assistance, on-site construction, engineering, project management and turnkey solutions. From project inception and execution until final acceptance, Sarralle provides the manpower, solutions and equipment to ensure a successful meltshop project.

### Scantron Robotics

[www.scantronrobotics.com](http://www.scantronrobotics.com)

Scantron Robotics USA Inc. is an industry pioneer in providing safe and cost-effective robotic inspections and cleaning of tanks and pipes on-line and in-service. We have extensive experience in applications involving non-potable and potable water tanks, reservoirs, cooling towers, basins and pipes — with zero safety recordables to date. Our customers include industrial companies such as Dow Chemical, DuPont, BASF and PPG. Stop by our booth to see our robotic equipment and talk with our representatives about how our services can fit your facility's needs.

### Schenck Process

[www.schenckamericas.com](http://www.schenckamericas.com)

Schenck Process is a global leader for supplying material handling equipment solutions in weighing, feeding, filtration and pneumatic injection for steel manufacturing processes. More than 100 engineers custom-design systems for blast furnace, electric arc furnace, scrap processing, meltshop or coil processing applications. We specialize in ladle and railcar weighing, pneumatic injection of carbon or lime, and dust filtration.

### Schneider Electric

[www.schneider-electric.com](http://www.schneider-electric.com)

Schneider Electric is a global specialist in energy management with operations in more than 100 countries. We provide solutions and services for power and process control, critical power, energy efficiency, sustainability, advanced weather forecasting, and plant monitoring and surveillance systems. As experts in systems architecture design, automation, process control and energy optimization, Schneider Electric has specialized performance and cost-optimized solutions to streamline steel/metals operations and processes while increasing productivity and reducing OPEX. Schneider Electric also provides solutions and expertise from our other brands, including Square D, Foxboro, Wonderware, Avantis, APC and Pelco.

### Schust Engineering

[www.schustengineering.com](http://www.schustengineering.com)

Schust Engineering Inc. specializes in the design, engineering and installation of environmental air pollution control systems, industrial ventilation equipment and material conveying systems. We offer a complete line of services from plant audits, design and detailing services, to complete turnkey installations and a full line of maintenance services.

### Schweitzer Engineering Laboratories

[www.selinc.com](http://www.selinc.com)

SEL partners with customers around the world to ensure the safe, reliable and economical delivery of electric power. We design, manufacture and support a complete line of products and services, ranging from generator and transmission protection to distribution automation and control systems. An employee-owned company, SEL follows core values that drive the way we view our community, industry, company and environment.

### SD Myers Inc.

[www.sdmyers.com](http://www.sdmyers.com)

SD Myers has been a pioneer in transformer maintenance and service for nearly half a century, a span that

includes more than 500,000 serviced transformers, 1 billion gallons of dielectric fluid processed and 7.5 million test results. We have been leaders in ensuring that our customers' transformers are tested, well maintained and serviced, and that their key employees with transformer oversight are well equipped to meet the daily challenges they face through our training and certification programs.

### Seifert Companies

[www.seifert.com](http://www.seifert.com)

Since 1985, Seifert Companies have worked with industry leaders in iron and steel and tire and rubber. We have expanded the company into different niches of business by adding Seifert Associates and Seifert Technologies IT Division. Seifert Technologies Engineering Division offers machine design, automation control systems, plant engineering, product development 3D printing and finite element analysis. Seifert Engineering offers one-stop-shop services, from concept solutions through installation. Our strengths include custom machinery design, prototype equipment, turnkey projects, project management, systems integration, and start-up and commissioning. Seifert Associates staffs qualified technical personnel for temporary to permanent positions, contracts and project teams.

### SenTek Corp.

[www.sentekcorp.com](http://www.sentekcorp.com)

SenTek Corp. provides gauging and shape systems, thickness gauges (fixed position, scanned profile and multi-zone profile), coating weight gauges, isotope and x-ray sensors and sources, inductive work roll heating at strip edges, gauge mechanical refits and refurbishments, rolling mill troubleshooting, gauge alignment and calibration, sealed source leak testing, electronics upgrades, obsolete component solutions, and NIST-traceable sample certification.

### Sentek Solutions Inc.

[www.senteksolutions.com](http://www.senteksolutions.com)

Sentek Solutions provides an extensive range of mill-duty laser sensors



for positioning, hot metal detectors, distance measuring, and speed and length measurement. Applications include laser distance measuring for positioning of cranes, transfer cars, coil handling and crane collision avoidance.

### SES LLC

[www.seseng.com](http://www.seseng.com)

SES is a leading supplier of material handling equipment and automation services for the metals, metals-forming and related industries. SES has the ability to handle projects ranging from small specialty items to major capital expansions, as well as redesign and rebuild of existing equipment. Our capabilities include transfer cars, transporters and associated meltshop equipment, slab handling equipment, long product handling and processing

equipment, strip processing equipment, coil handling equipment, and custom-designed and -built equipment. SES provides quality, robust, cost-effective designs from two manufacturing facilities in Alliance, Ohio, USA, and our Toronto, Ont., Canada, automation operations.

### Severn Trent Services

[www.severntrentservices.com](http://www.severntrentservices.com)

Severn Trent Services is a leading provider of water and wastewater solutions. The company's broad range of products is focused on filtration, biological and adsorption technologies, all disinfection processes, instrumentation and contract operating services. Our filtration products include: TETRA® DeepBed™ pressure and gravity filters; ColOX™ biological aerated filters; Denite® filters; RO

membrane systems, filter system analysis, filter conversions and rebuilds, and technical service. Our disinfection products include: ClorTec® on-site hypochlorite generators, ultraviolet disinfection, gas feed equipment, chloride dioxide generators and emergency scrubbers.

### SGL Carbon

[www.sglgroup.com](http://www.sglgroup.com)

The Business Unit Graphite and Carbon Electrodes (BU GCE) manufactures regular-sized and super-sized ultrahigh-power graphite electrodes for the production of steel in electric arc furnaces, and the world's largest carbon electrodes for use in smelting applications such as silicon and phosphorus. Furthermore, SGL produces long-lasting linings for blast furnaces for the production of pig iron. We



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Schenck Process has built its reputation on designing and manufacturing weighing, feeding, filtration and pneumatic injection systems for manufacturers throughout the world. For steel processes we work directly with operators and plant managers to create the ideal bulk material handling system for blast furnace, electric arc furnace, scrap processing, coil processing and melt shop applications.

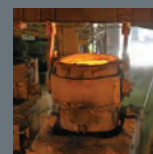
#### Our solutions for steel processes include:

- ❖ Ladle Weighing
- ❖ Carbon and Lime Injection
- ❖ Railcar Weighing
- ❖ Vibratory Feeding
- ❖ Crane Weighing
- ❖ Dust Collection
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[www.schenckamericas.com](http://www.schenckamericas.com)



have local sales offices in more than 90 countries, offer a wide range of services, and partner with customers to offer inventory and supply security from production locations on three continents. We strive to be the electrode supplier of choice, with customized solutions from our broad product, service and technology portfolio.

### SGM Magnetics Corp.

[www.sgmmagnetics.com](http://www.sgmmagnetics.com)

SGM Magnetics Corp. is a global leader in magnetic solutions for material handling systems and separation technology, specializing in ferrous and non-ferrous metals, offering turnkey solutions within the steel and recycling industry, including steel mills, service centers, ports, scrap yards, automotive shredders, as well as glass, wood and municipal waste recycling. SGM Magnetics manufactures electro and electro-permanent lifting magnets, spreader beams, eddy current separators, drum magnets, magnetic pulleys, overbelt magnets, sand jets and sensor sorter separators, along with control panels, auxiliary devices and structures. SGM's service department offers technical assistance, troubleshooting, repairs on- and off-site, design-build services, along with preventive maintenance programs and a wide inventory of spare parts.

### Shanghai Gongxiang

[www.pubang.sh.cn](http://www.pubang.sh.cn)

Shanghai Gongxiang Mechanism and Electric Manufacture Co. proudly presents the products of the Maanshan Iron and Steel Co. Ltd. (MA Steel). MA Steel is a steel producer in China with 18 million tons of production capacity. It has a world-class production line of cold and hot roll steel plates, zinc-coated plate, color-coated plate, H-beam and high-speed rail wheels. Its products are exported to 50 countries and regions, and widely used in aircraft, railroads, cars, appliances, shipbuilding, construction and machinery. Our goal is to build a bridge between MA Steel and North American clients. We also offer various cranes and conductor rail products. We hope to provide the best

products and services, and we will go the extra mile to meet your demands.

### Shapeline

[www.shapeline.com](http://www.shapeline.com)

Shapeline is a leading supplier of optical flatness measurement systems for the flat metal industry. The systems are made for in-line applications, 100% quality assurance and control applications. We provide flatness evaluation and analysis tools as well as signals for automated control. Shapeline is a trusted partner for flat metal producers all over the world.

### Shinagawa Refractories Co. Ltd.

[www.shinagawa.co.jp/index-en.html](http://www.shinagawa.co.jp/index-en.html)

In 1875, Shinagawa Refractories Co. Ltd. was the first private Japanese company to manufacture refractory bricks. We develop new technologies in the manufacture of refractories, the design of furnaces, furnace construction engineering services and the development of new ceramic products. We have exported engineering, know-how and refractory products to more than 50 countries, and we continue to expand our business to the rest of the world. Our North American production facility is located in Mogadore, Ohio. This plant houses our manufacturing systems and quality assurance testing laboratories. We have developed a series of technologically advanced continuous casting mold powders, including exothermic granulated and fine powders, carbon-free powders and high-viscosity powders.

### Showa Denko Carbon Inc.

[www.sdkcnet.com](http://www.sdkcnet.com)

Showa Denko Carbon Inc. (SDKC) is the U.S. subsidiary of Tokyo-based Showa Denko KK, a global, diversified producer of metals, chemicals and graphite electrodes. SDKC manufactures large-diameter UHP graphite electrodes for steel producers in North and South America and Europe. We also produce granulated graphite as a carbon raiser for steel, for brake linings and other uses. Visit our booth at AISTech 2015.

### Shuttlelift

[www.shuttlelift.com](http://www.shuttlelift.com)

Shuttlelift rubber-tired gantry cranes are the preferred customer-inspired solution for heavy lifting requirements and are manufactured to specification for a multitude of applications worldwide. The Sturgeon Bay, Wis., company manufactures cranes with capacities ranging from 15 to 1,000 tons, all of which are supported by a global network of experienced dealers. Through superior engineering innovations, Shuttlelift has become one of the premier lines in today's materials handling industry.

### Siemens VAI

See Primetals Technologies USA LLC.

### Signal Metal

[www.signalmetal.com](http://www.signalmetal.com)

Celebrating our 40th anniversary, Signal Metal Industries specializes in the design of ladles, charge buckets and ladle J-hooks. We can also provide your company with turnkey manufacturing, including fabrication, machining, thermal stress relief, and assembly of heavy equipment and machinery for the steelmaking industry using customer-supplied drawings. Signal Metal Industries has 200,000 sq. ft. of heavy manufacturing area under roof, situated on a total of 22 acres, equipped with large-capacity overhead cranes exceeding 150 tons of lifting capacity. Our facility is set up to allow us to keep every aspect of your build in-house, from our on-site ASME-certified stress-relief oven to our state-of-the-art paint facility.

### Silvent North America Inc.

[www.silvent.com](http://www.silvent.com)

"Improve Quality, Just Add Air." Improved steel quality, reduced energy consumption and lower noise levels are what Silvent InTech's integrated technologies deliver to the steel industry. For more than 20 years, Silvent has been a leader in the market segment of compressed air blowing. Our research and development have allowed us to work with every major manufacturer in the world, engineering advanced





products in an ever-changing and demanding industry. Today, Silvent InTech works exclusively with steel mills and related OEMs. In hot mills and cold mills, from pickling to finishing, Silvent InTech's products and expertise are used worldwide to improve the quality of steel.

### **Simmers Crane Design & Services**

[www.simmerscrane.com](http://www.simmerscrane.com)

Simmers Crane Design and Services is an engineering and service company providing engineered upgrades, control changes, emergency service, new equipment and OSHA crane inspection programs. We are an independently owned company and have a local crane manufacturing facility in Euclid, Ohio, USA. Headquartered in Salem, Ohio, with U.S. branch offices in Erie, Pa.; Pittsburgh, Pa.; Buffalo N.Y.; Cleveland, Ohio; Chicago, Ill.; Milwaukee, Wis.; and Rockford, Ill.

### **SKF USA Inc.**

[www.skfusa.com](http://www.skfusa.com)

SKF is a leading global supplier of solutions and services for the steel industry. SKF's main technology areas include bearings, housings, roll line units, seals, portable and on-line condition monitoring systems, lubrication systems and specialized bearing lubricants. Additionally, SKF offers maintenance, asset management and engineering services as well as training.

### **Slingofer Srl**

[www.slingofer.eu](http://www.slingofer.eu)

Slingofer Srl designs and manufactures lifting and handling equipment for iron metallurgical products. Our main equipment includes: aerial and stationary tilters, slab tongs/lifters, mill pack tongs/lifters, tongs for work rolls and backup rolls, and ingot tongs. Our equipment is used for lifting, handling, storing in iron metallurgy, ports, hot or cold rolling mills. We employ innovative engineering, 3D CAD and international rules. We also offer after-sales service, and we are ISO 9001 certified. Since 1961, Slingofer Srl has acquired a know-how

in the construction of lifting and handling equipment. When the next material handling issue arises, let Slingofer experts advise you, as our aim is to solve the client's problems and to satisfy clients' requests. Visit us on the Web at [www.slingofer.eu](http://www.slingofer.eu).

### **SlipNOT® Metal Safety Flooring**

[www.slipnot.com](http://www.slipnot.com)

SlipNOT® Metal Safety Flooring manufactures durable, slip-resistant metal flooring products, including non-slip floor plates, grating, perforated plate, flattened expanded metal, stair treads, ladder rungs, and handrails for hot and cold rolling mills across North America. SlipNOT products are utilized for coolant, lubricant and recycling trenches, crossovers, catwalks, mezzanines, walkways, operator platforms, lift tables and various other applications. The unique SlipNOT process deposits a stream of molten metal onto steel, aluminum and stainless steel substrates, creating an aggressive non-slip layer permanently bonded to the applied area at over 4,000 psi. SlipNOT safety products retain traction in the most demanding environments, even when submerged in oil and other substances.

### **SMS group**

[www.sms-group.com](http://www.sms-group.com)

Provides complete engineering and manufacturing of metallurgical plant and rolling mill equipment. The company's market range includes the complete process chain: steelmaking and secondary metallurgical facilities, continuous casting technology, reheat and induction furnaces, hot and cold rolling mills, including Steckel rolling technology, processing lines, high-pressure grinding machines for bars, ingots, billets and slabs, as well as a complete spectrum of long product rolling mills, closed-die forging machines, extrusion machines, open-die and hydraulic forging machines, drawing and finishing lines and ring rolling machines. SMS USA LLC provides revamps and upgrades for pipe mills and extrusion press equipment. SMS USA LLC will also provide

complete plants for the production of seamless and welded tubes and pipe for the steel, copper and aluminum industries.

- **SMS USA LLC**

[www.sms-siemag.us](http://www.sms-siemag.us)

Metallurgical plant and rolling mill technology from one source. Our plants, machines, services and process know-how are used in the steel, aluminum and non-ferrous metal industries worldwide. A full range of products and services is offered from melting through finished rolling, including energy and environmental technology, under the SMS group umbrella. We plan and design, develop, finance, construct, install, automate and train. So you can rely on tailor-made, all-inclusive plants, or extensions, modernizations and revamps. Our technologies all pursue a single goal: increasing and sustaining our customers' competitiveness.

- **SMS Technical Services LLC**

[www.sms-millcraft.us](http://www.sms-millcraft.us)

The result of a recent merger between SMS Millcraft and SMS Meer's USA operations, SMS Technical Services LLC, headquartered in Cranberry Township, Pa., is a world leader in outsourced maintenance services for the steel and non-ferrous metals industry. We provide comprehensive maintenance and spare part services for steel works/continuous casting, tubes, forging, non-ferrous technology and heat treating from one single source. In addition to traditional refurbishment services for all major OEM equipment, we offer comprehensive field services and modernization projects. With our maintenance and service related culture and 18 well-equipped facilities throughout the U.S., we can help any metals producer or processor extend campaigns, reduce maintenance costs, and provide solutions to their production challenges.

- **SMS Concast America Inc.**

[www.sms-concast.net](http://www.sms-concast.net)

SMSConcastAmericaInc.isawholly owned subsidiary of SMS Concast

AG, responsible for the U.S. and Canadian markets. SMS Concast focuses exclusively on process and technology for the long product steelmaking sector. The design and supply of the following technological key equipment comprise the core of SMS Concast's expertise: electric arc furnaces; vacuum degassing plants; ladle furnaces; continuous casting machines for blooms, beam blanks, rounds and billets; and mini-mills.

#### • SMS Elotherm North America

[www.sms-elotherm.com](http://www.sms-elotherm.com)

SMS Elotherm provides high-performance machines and turnkey induction process solutions for heating, heat treating, hardening, welding, galvanizing, coating and countless custom processes. Applications include hot rolling, forging, quench/temper and hardening of flat products, bars, rods, billets, tubular products, strapping, discrete parts and continuous processes. With more than 6,000 systems in operation globally, deep in-house quality engineering and manufacturing, and responsive 24/7/365 local support, you can count on SMS Elotherm for high-productivity induction technology solutions for your metals and manufacturing operations.

#### • SMS Logistiksysteme GmbH

[www.sms-logistiksysteme.com](http://www.sms-logistiksysteme.com)

Our program of products and services covers the entire spectrum of transport, storage and packaging logistics for the metals industry. As an expert and experienced main contractor, we support and supervise your project from the preliminary planning phase to after-sales service. By linking various transport technologies, we achieve complex logistics concepts — from planning and design to implementation, including the entire automation technology. We supply transport systems for flat

rolled, roll-formed and semi-finished products.

#### • Drever International

[www.drever.be](http://www.drever.be)

Drever International is a market leader for continuous annealing and galvanizing of carbon steel strip and annealing stainless steel strip. For nearly 50 years, Drever International, together with its subsidiary Drever Systems, has serviced the steel industry throughout North and South America, Europe and Asia.

#### • Paul Wurth Inc.

[www.paulwurth.com](http://www.paulwurth.com)

Paul Wurth has been servicing the North American iron and steel industry for 30 years. Recently, Paul Wurth has joined the SMS group of companies. Paul Wurth's capabilities include ironmaking, cokemaking and steel mill waste recycling technology, with a full range of services, including feasibility studies and engineering to supply equipment and installation support services. Paul Wurth opened a North American service center in Valparaiso, Ind. The newly established service center can provide a broad assortment of shop services, including disassembly and inspection assessment, shop repair refurbishment, equipment performance assessments, on-site repair, major maintenance assessment and valued-added engineering support.

#### Solenis

[www.ashland.com](http://www.ashland.com)

Solenis is a leading global manufacturer of specialty chemicals for the pulp, paper, oil and gas, chemical processing, mining, biorefining, power and municipal markets. The company's product portfolio includes a broad array of process, functional and water treatment chemistries, as well as state-of-the-art monitoring and control systems. These technologies are used by customers to improve operational efficiencies, enhance product quality, protect plant assets

and minimize environmental impact. Headquartered in Wilmington, Del., the company operates 30 manufacturing facilities strategically located around the globe and employs a team of 3,500 professionals in 118 countries across five continents. For additional information about Solenis, please visit [www.solenis.com](http://www.solenis.com).

#### Solutions Center

This year there will be a series of about 10 solutions-oriented companies that have come together to secure one block of booth space. This Super Booth will allow attendees the opportunity to speak with the best in class within their respective fields. Each member of the Super Booth is committed to customer solutions, and the members range from data diagnostic systems and services, to custom bearing solutions, fastener technology and installation, lubricant supplier, lubrication systems and solutions, equipment management, and hydraulic solutions. One Super Booth will service multiple critical needs for the steel industry in giving expertise that covers multiple facets of this unique and challenging industry.

#### Sonetics Corp.

[www.soneticscorp.com](http://www.soneticscorp.com)

Sonetics is a leading global provider of team communication systems for challenging work environments. Sonetics, along with its Firecom and Flightcom divisions, recently celebrated its 30th year as a leader in customer service, innovation and deployment in the wireless team communications industry. We've been privileged to help firefighters, first responders, commercial aviation and military personnel communicate clearly when lives are on the line and failure is not an option. Founded in 1983, Sonetics was born when owner and founder Brian VanderPloeg had trouble hearing his flight instructor in a noisy cockpit. An innovative problem-solver, VanderPloeg invented his own. That same spirit of innovation and customer service continues today in Sonetics, Firecom and Flightcom.



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SES is a leading global supplier of material handling equipment, automation and services for the metals, metals-forming and related industries. We're constantly evolving to meet our customers' needs. We strive to exceed the range of capabilities offered by our competition by providing quality equipment and services through People-Driven Solutions.

To learn more about how our capabilities and services can help your mill reach optimum performance, visit [www.seseng.com](http://www.seseng.com) or call **330.821.3322**.



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**Sonic Air Systems**[www.sonicairsystems.com](http://www.sonicairsystems.com)

The Sonic 50-hp high-velocity air blower with air knives and air nozzle headers will replace 200-hp of compressed air for liquid blowoff and drying in every steelmaking and processing facility from hot mills to coating lines, as well as tube and pipe mills. We will exhibit our blower model SONIC 350 with 50-hp motor and system components.

**Spraying Systems Co.**[www.spray.com](http://www.spray.com)

Spraying Systems Co. is a leader in spray nozzles, providing the best in spray nozzles and accessories, complete integrated systems, support services and expertise to the steel industry. We offer a complete line of products designed specifically for use in steel mills, including cooling in continuous casting, hot mill and finishing mill operations; descale, coating, rinsing and cooling for pickling lines; gas conditioning, pollution control, quenching and cooling in coke-making operations; and many other applications.

**SRI**[www.sriregistrar.com](http://www.sriregistrar.com)

SRI is an accredited, international registrar offering registration and training services for ISO 9001, 14001, 27001, 13485, 20000, ISO/TS 16949, AS9100/9100, OHSAS 18001/Z10 and RC14001/RCMS. With senior auditors who bring extensive industry-specific experience, attentive customer care, flexible scheduling and results-focused audits, SRI delivers value at every event. Choose SRI.

**Starex Inc./Nantong Carbon**[www.starexinc.com](http://www.starexinc.com)

Starex Inc., headquartered near Chicago, supplies high-quality graphite electrodes to steel mills and foundries. Produced by Nantong Carbon, an ISO 9000-certified manufacturer in China, our premier-quality graphite electrodes help our customers lower melting costs and improve their bottom lines. Direct supply from our

manufacturers enables Starex to offer competitive pricing and provide timely delivery. In addition to meeting customer needs, Starex products are factory warranted for superior quality and outstanding performance. As we enter our second decade, we continue to be committed to customer-sensitive service provided by our expert representatives. Contact us at +1.857.918.5555, [info@starexinc.com](mailto:info@starexinc.com) or [www.starexinc.com](http://www.starexinc.com).

**Steel Times International**[www.steeltimesint.com](http://www.steeltimesint.com)

With more than 130 years of publishing experience, *Steel Times International* reports on iron- and steelmaking issues from all corners of the globe. The magazine keeps the international steel market up-to-date on the latest in the industry, including: well-informed technical articles; regular comments and articles from industry experts; and the latest news from across the globe. With 13 publications a year, including English, Chinese, Russian and Spanish issues, *Steel Times International's* readership is one of the largest in the sector, with more than 110 countries receiving the journal. In addition, *Steel Times International* publishes the steel industry's Buyers' Guide, distributed to steel professionals. To find out more and register for a copy, visit [www.steeltimesint.com](http://www.steeltimesint.com).

**Stellar Materials Inc.**[www.stellarcanadainc.com](http://www.stellarcanadainc.com)

Stellar Materials recently acquired Cardinal Refractories and Stellar Canada Inc., and will promote the Stellar Insulating System, which reduces furnace operating costs while increasing process improvements through the use of low-density mullite linings. The system incorporates a combination of on-site audits, custom-engineered installation linings and ceramic anchoring systems provided by our insulating systems staff to bring cold face furnace temperatures down and keep them down. We won't tell you how to operate your furnace to gain improvements — we'll provide you with a system that gains improvements

based on how you operate! That's the Stellar Insulating System.

**Stollberg, member of the S&B Group**[www.SandB.com](http://www.SandB.com)

S&B Industrial Minerals' Stollberg product line is recognized for the supply of high-quality, performance-driven, ceramic-based fluxes. Through its seven worldwide research, production and applied knowledge centers, S&B Stollberg products have continuously delivered engineered solutions for the issues and concerns of its customers. Utilizing highly skilled engineers, technical partnerships have been forged with our customers. S&B's quality products, competent technical services and state-of-the-art manufacturing facilities all translate into greater value for our customers.

**Stoody Co.**[www.victortechnologies.com](http://www.victortechnologies.com)

Highlighted in this year's booth will be data on the latest hardfacing alloys for the repair of steel mill rolls. You will also find data on our conventional Thermaclad submerged arc welding wires, as well as our new comprehensive, complete line selection guide. Stoody's specially formulated wires remain an industry standard for joining, buildup, repair and hardfacing for numerous applications and industries.

**STOR-LOC**[www.storloc.com](http://www.storloc.com)

Stor-Loc is an American manufacturer of heavy-duty tool storage and workbenches.

**Sund Birsta AB**[www.sundbirsta.com](http://www.sundbirsta.com)

Sund Birsta AB is a leading supplier of wire binding machines, strapping machines, coil compactors, bar counters and other handling equipment to the steel industry. Our solutions are built on a genuine know-how and a thorough understanding of our customers' needs, demands and expectations. Sund Birsta AB develops, markets and delivers everything from

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"Lula" – the second-largest oil field ever found – lies off the coast of Brazil. 8 billion barrels of crude oil will be extracted here in the near future from depths of up to 7 kilometres. That is only possible with premium seamless tubes of the highest quality. Vallourec & Sumitomo Tubos do Brasil has therefore purchased the best plant engineering available worldwide: The PQF® process from SMS Meer. Staying on the safe side.

Quality unites – a fact that our customers and we discover time and again with every new project. Together we develop solutions that give our partners the competitive edge in their business. Thanks to this good cooperation, SMS Meer is a leading international company in heavy machinery and plant engineering.

[www.sms-meer.com](http://www.sms-meer.com)

**SMS**  **group**

MEETING your EXPECTATIONS

single machines to complete handling systems. The main goal of Sund Birsta AB is to meet our customers' needs, demands, and expectations of products and services. Through meeting the expected quality and gaining customer satisfaction, Sund Birsta AB will be known as a leading supplier in the market.

### Superior Environmental Solutions (SES Inc.)

[www.superiorentermentalsolutions.com](http://www.superiorentermentalsolutions.com)

SES Inc. was founded in response to the growing need for a quality, cost-effective, safety-conscious industrial cleaning service provider. SES offers services that are crafted to meet our customers' needs, including scheduled maintenance, plant outages and emergency response services. SES utilizes a specialized fleet of equipment to meet the demanding requirements of our customers. SES is available 24 hours a day, 365 days a year. Our services include:

- Wet/dry vacuum truck services.
- Water blasting/pressure washing.
- Tank/vessel cleaning.
- Sumps/pits/trench cleaning.
- Cooling tower cleaning.
- Boiler cleaning.
- Building/equipment decontamination.
- Roll-off, vacuum box, frac tank services.
- Waste hauling services.

### Superior Graphite

[www.superiorgraphite.com](http://www.superiorgraphite.com)

Superior Graphite is a leader in providing the iron and steel industry with high-value graphite/carbon solutions. Superior Graphite operates two different electrothermal continuous process technologies, which, in turn, provide high-value end graphite/carbon products to customers. Located in Russellville, Ark., the company is uniquely focused on manufacturing mid-size-diameter (200- to 400-mm) Ark<sup>®</sup> graphite electrodes used in electric arc furnaces. Ark electrodes benefit from a unique continuous graphitizing technology that imparts

uniform and consistent properties on each piece.

### Superior Industries

<http://superior-ind.com>

Superior Industries has a reputation of engineering and manufacturing groundbreaking bulk material handling conveyors and cutting-edge components. From its headquarters in Morris, Minn., the manufacturer supplies the market with stackers, transfer conveyors and stationary systems plus idlers, pulleys and accessories to lower operating costs and increase production. The company manufactures from two additional plants in Arizona and Georgia.

### Superior Machine

[www.smco.net](http://www.smco.net)

Superior Machine has more than 40 years of experience serving the North American steel industry with time-critical engineering, state-of-the-art upgrade design, fabrication and complete field service capability. Superior specializes in the design, supply and installation of: electric arc furnaces and their sub-assemblies; ladle furnaces and secondary refining equipment; innovative continuous casting machine designs; water-cooled offgas ductwork and combustion/dropout chambers; field service to reassemble and install equipment or for maintenance outage support, including alignments and in-place machining; engineering or commercial evaluation services; technical/process evaluations and constructability studies.

### System Seals Inc.

[www.systemseals.com](http://www.systemseals.com)

System Seals leads the industry in high-performance, complete customized sealing systems for hydraulic and fluid applications in a wide variety of industrial markets. System Seals engineers design sealing systems specific to each application, including piston and rod seals, guide bands and wipers. Because each part influences the performance of the other components, our systems approach substantially increases performance and increases productivity and reliability. The

company's reputation for highly technical designs, rapid turnaround and proprietary materials sets us apart. No other seal manufacturer brings all of these elements together in a way that offers direct financial benefits to our customers.

### Systems Spray-Cooled Inc.

[www.spraycooled.com](http://www.spraycooled.com)

Systems Spray-Cooled<sup>™</sup> equipment has increased operating efficiency while lowering operating and maintenance costs with a safer, more environmentally friendly approach to heat load management and protection. Let Systems introduce the many beneficial results of conversion to our Spray-Cooled technology in your shop.

### T. Bruce Sales Inc.

[www.tbrucesales.com](http://www.tbrucesales.com)

T. Bruce Sales Inc. is a fully rounded heavy-plate and structural fabricator with a fully equipped machine shop. We specialize in material handling equipment and custom machine building. We offer many services, from cutting, sawing, rolling and welding, to machining, stress relieving, blast cleaning, painting and testing services. In one location for maximum control and quality for more than 35 years.

### Tallman Bronze

[www.tallman-bronze.com](http://www.tallman-bronze.com)

Tallman Bronze is a leader in gas and solids injection technologies for the steel and ironmaking industry. We provide complete customized solutions to meet our clients' needs. BOF products include post-combustion distributor lances and secondary decarburization lances, complete with our patented Internal Lance Support System (ILSS) for "bend-free" lances; cold shroud lance technology; and Swirl Cool Technology. For blast furnaces, we provide high-velocity water-cooled tuyeres, cooling plates, cigar coolers, CeraMetal refractory metal tuyere inserts and innovative water-saving technologies. For electric arc furnaces, we provide Tallman Supersonic Carbon Injector (TSCi)

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For more information, visit [AISTech.org](http://AISTech.org).

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"I found the conference to be very student-friendly. Not only were we incentivized to participate and present our research, but also everyone, from presenters to exhibitors, seemed helpful and keen on giving information, which helps us to keep up-to-date with the industry state of the art and orient our future research. All in all, a very worthwhile experience."

—Jorge Gibson, Carnegie Mellon University

"I enjoyed being able to go everywhere during the conference, and not be limited by my student status. I was able to go to the technical sessions, panels, Town Hall Forum and opening ceremony without being restricted."

—Zachary Boyden, Michigan Technological University

systems, cast copper cooling panels, EAF burners and EAF oxygen lances.

### Tamini Transformers

[www.tamini.com](http://www.tamini.com)

Tamini Transformers manufactures furnaces, series reactors, rectifiers and special transformers for industrial applications, as well as auto-transformers, generator step-up, and distribution transformers for utility and industry to 765 kV and 1,000 MVA. Our people and our steel industry experience are available to assist you in making the right choice.

### Taylor Machine Works Inc.

[www.taylorbigred.com](http://www.taylorbigred.com)

Taylor Machine Works Inc. features a variety of pneumatic tire lift trucks for the heavy metals industries. Included are the TX series, with lift capacities of 16,000–92,500 lbs. Larger-capacity handling is provided by lift trucks with 100,000- and 120,000-lb. lift capacities. Conventional forks and coil rams are available. The compact, cushion-tire XC series offers lift capacities ranging from 18,000 to 35,000 lbs. The Taylor heavy-duty cushion-tire trucks extend capacities to 50,000 lbs. Forks, rams and other metal-handling attachments are available for all cushion-tire vehicles. Partnered with Taylor Machine Works, Sudden Service Inc. provides the finest parts and service support available, assuring Taylor's big red machines get the job done!

### Tebulo NA Ltd.

[www.tebulo-na.com](http://www.tebulo-na.com)

Tebulo is a leader in robotic solutions for the metals industry. At our booth, we will be presenting: robotic debanding; robotic marking and labeling for hot slab, hot billet, hot coil and cold coil; robotic strapping solutions; and custom robotic applications. Tebulo — technical experts, driven by engineering.

### Technical Weighing Services Inc.

[www.techweigh.com](http://www.techweigh.com)

Technical Weighing Services engineers, manufactures and installs weighing systems, in-motion crane weigh systems, roll force measurement systems and strip tensioners for the steel industry worldwide. We provide solutions ranging from repairs and replacements for all brands of load cells, to complete integrated control and material handling solutions and weighing systems.

### Temtek Solutions/MSSI Refractory

[www.temteksolutions.com](http://www.temteksolutions.com)

Temtek Solutions manufactures and provides state-of-the-art, high-temperature solutions with a wide array of custom precast refractory and ceramic fiber products. Temtek Solutions' product line includes precast refractory shapes, CerMet™ high wire abrasion and thermal shock-resistant shapes, custom-made ceramic fiber modules, UltraBlock™ engineered fiber panels, Maftec engineered solutions, as well as a wide variety of products and services for the high-temperature industrial furnace market.

### Tenova

[www.tenovagroup.com](http://www.tenovagroup.com)

Tenova designs and supplies advanced technologies, products and services for the metals and mining industries. Tenova operates through a network of more than 33 companies based on five continents. In the steelmaking sector, Tenova operates through: Tenova HYL direct reduction technology and plants; Tenova LOI Italmimpianti heat treating and reheating furnaces; Tenova Melshops, specializing in EAFs with the Consteel® process; Tenova Goodfellow with its EFSOP® system for continuous real-time gas analysis and measurement; Tenova RE Energy heat recovery for industrial furnaces; Tenova I2S with its cold rolling mills and ancillary equipment; Tenova Pomini, which supplies roll grinding machines; and Tenova Strip Processing, high-performance and

environmentally friendly equipment for strip processing requirements.

### TES–Transformer Electro Service Srl

[www.testransformer.com](http://www.testransformer.com)

Based in the heart of Italy's main metal working area, TES is one of the most highly evolved and qualified companies which designs and manufactures high-power and high-current transformers. The specialization in the design, production and testing of power transformers, EAF/SAF/ESR/LF transformers, rectifier transformers and series reactors, the efficient after-sales service, the high quality standards of its products, the international commercial experience and, most of all, the customization of its products based on its customers' needs make TES the ideal supplier for the worldwide metallurgical industry. TES has organized a special sales network, consisting of technically qualified personnel, providing assessments in tune with new market dynamics. Visit us at AISTech. We'll be pleased to welcome you in our booth and provide the most practical solutions to your needs.

### ThermalMax Inc.

[www.thermalmaxinc.com](http://www.thermalmaxinc.com)

Thermalmax offers a full spectrum of high-temperature insulation and installation services for industrial heating equipment. As one of the largest Thermal Ceramics distributors in the U.S., we maintain a significant inventory of these materials in our 35,000-sq.-ft. warehouse. Our second location, with 10,000 sq. ft. of manufacturing space, enables us to offer portability to our customers and ship units to our shop for refractory installation. In addition, our staff engineers can provide detailed design and drawings for your particular furnace project and manage the job from start to finish. For more information, visit [www.thermalmaxinc.com](http://www.thermalmaxinc.com). Stop by to learn more about our proven system for relining your reheat furnace.





## Thermo Scientific

[www.thermoscientific.com/metals](http://www.thermoscientific.com/metals)

Thermo Scientific systems provide critical process data in the lab and on-line. Our products deliver real-time analysis along with measurement and control of processes to help improve quality and productivity. We offer leading-edge solutions for laboratory XRF, XRD or OES, handheld XRF and OES analysis, on-line elemental analysis, on-line gas analysis, on-line moisture analysis, thickness measurement and coating weight measurement, radiation measurement and protection, and laboratory information management systems. Thermo Scientific is part of Thermo Fisher Scientific. Visit our booth to learn how Thermo Scientific products make a difference in the steel industry. Visit [www.thermoscientific.com/metals](http://www.thermoscientific.com/metals) and [www.thermoscientific.com/oes](http://www.thermoscientific.com/oes), or email us at [sales.gauging@thermofisher.com](mailto:sales.gauging@thermofisher.com).

## Thermo-Calc Software

[www.thermocalc.com](http://www.thermocalc.com)

Thermo-Calc Software is a leading developer of software and databases for calculations involving computational thermodynamics and diffusion-controlled simulations, and is widely used by alloy developers, steelmakers and OEMs. Thermo-Calc is a powerful tool for performing thermodynamic calculations for multi-component systems. Databases are available for steels, ferrous-based slags, Ti, Al, Ni-superalloys and other materials. Programming interfaces are available that enable Thermo-Calc to be called directly from in-house-developed software or MatLab. DICTRA is used for accurate simulations of diffusion in multi-component alloys. TC-PRISMA is a new software tool for modeling precipitation kinetics.

## Thermocast S.p.A.

[www.thermocast.it](http://www.thermocast.it)

Thermocast manufactures steel and alloyed castings resistant to heat, wear and corrosion. The foundry products are used in steel plants, continuous annealing lines and continuous galvanizing lines, cement industries, heat treatment shops, petrochemical,

incinerators and glass industries. Thermocast activity is based on problem solving and technological improvement of cast parts. Our main products are: furnace rollers, radiant tubes, immersed and stabilizing rollers, and heat treatment tools. Thermocast's know-how in the steel sector, together with our production capacity, make us an ideal partner for accuracy and reliability. Close cooperation with our customers is a key factor in fine-tuning our quality standards beyond the requirements imposed by ISO 9001:2008 certification.

## TMEIC

[www.tmeic.com](http://www.tmeic.com)

TMEIC is an industry leader in hot mill automation, with almost 100 years of experience in process control and automation technology for hot mills, cold mills, long products and processing lines. Technical capabilities include complete engineering and design, mill modernizations and revamps, simulation and testing, and comprehensive project management. Site services include mill audits, start-up and commissioning. Our complete range of steel mill automation products includes large AC and DC main drives and motors, auxiliary drive equipment, level 1 controllers, level 2 process models and HMI systems. We welcome the opportunity to discuss how these principles can be applied to your steel process when you visit our booth.

## Tokai Carbon Group

[www.tokaielectrodes.com](http://www.tokaielectrodes.com)

Tokai Carbon Co. Ltd. produces the full range of UHP graphite electrodes (up to 32-inch diameter) in our three plants located in Japan and Germany (TOKAI-ERFT). We are honored to serve the worldwide EAF steel industry. Our Cleveland, Ohio-based TCES LLC subsidiary is dedicated to providing our North American customers with technical service, sales and logistics support. Contact us at +1.440.543.0915, [cpiazza@tokaielectrodes.com](mailto:cpiazza@tokaielectrodes.com) or visit the TCES LLC website at [www.tokaielectrodes.com](http://www.tokaielectrodes.com).

## Transformers & Rectifiers (India) Ltd.

[www.transformerindia.com](http://www.transformerindia.com)

Transformers & Rectifiers (India) is a leading manufacturer having three different manufacturing facilities in Moraiya, Changodar and Odhav, and we are the third-largest manufacturer in India with total installed capacity of 36,000 MVA. We have the capacity to manufacture power transformers up to 1,000 MVA; 1,200-kV voltage class distribution transformers from 315 kVA and above; furnace transformers up to 120 kA; rectifier transformers up to 160 kA DC; reactors up to 765 kV, etc. We have state-of-the-art manufacturing facilities with ultra-modern testing laboratories with the capacity of testing up to 1,200-kV transformers. We are certified by BVCI for ISO - 9001-2008, ISO 14001:2004 and BS OHSAS 18001:2007.

## TransTech

[www.transtech.com](http://www.transtech.com)

TransTech engineers and manufactures systems that power moving machines, including the Delta Star/HK Porter heavy-duty conductor bar systems for overhead cranes. We also provide the AKAPP and Stemmann-Technik brand of conductors, cable reels and festoon systems. TransTech's products and services are highly esteemed by the industry leaders who use them, and we are proud to be able to meet the demanding standards placed on us by the steel industry. Our team of engineers is adept at providing the highest-quality conductor bars, collectors, components and insulators to keep even the most demanding electrification applications up and running. Come by our booth at AISTech 2015 to talk with us about your electrification needs.

## Tribco Inc.

[www.tribco.com](http://www.tribco.com)

Tribco will exhibit brake pads, brake discs and clutch plates that last 3-5 times longer than the parts they replace because they are lined with Braketex® — the world's only 100% Kevlar®-fibered textile composite friction lining. Longer-lasting Braketex

is also non-abrasive and won't wear down or score rotors and drums. Additionally, Braketex is dust-free, thereby eliminating the dirty, damaging dust created by conventional friction linings. Braketex is ideal for cranes, hoists, winders, slitters, and other iron and steel industry friction applications. Braketex-lined parts have been performance proven in thousands of brake, clutch and other friction applications worldwide for more than 30 years. This includes the iron and steel industry and other industrial and manufacturing friction applications.

### T-T Electric USA

[www.ttelectricusa.com](http://www.ttelectricusa.com)

T-T Electric, formerly Thrige Electric, manufactures a comprehensive range of DC and AC square frame motors, including NEMA, IEC and mill-duty offerings up to 2,500 hp.

### Tube City IMS

[www.tubecityims.com](http://www.tubecityims.com)

Tube City IMS Corp. is the largest provider of outsourced industrial services to steel mills in North America, as measured by revenue, and has a substantial and growing international presence. We provide services at 81 customer sites in 12 countries and operate 36 brokerage offices from which we buy and sell raw materials across five continents. Tube City IMS is an industry leader with a comprehensive and pioneering array of pre- and post-production mill services for global steelmakers. We are experts in on-site services, including scrap purchasing and use optimization, inventory management, logistics, metal recovery, slag processing, steel scarfing, surface conditioning, refractory removal and maintenance. Visit us at our booth for more information.

### Tube-Mac Piping Technologies

[www.tube-mac.com](http://www.tube-mac.com)

Tube-Mac® Piping Technologies (est. 1977) is a dynamic company internationally renowned for its non-welded piping systems and components.

Tube-Mac utilizes three technologically advanced systems: TMI® 37° Flare Flange, TMI Retain Ring Flange and PYPLOK® mechanically attached fittings as more cost-effective alternatives to welded piping systems. These systems can be installed and flushed in one tenth of the time compared to conventional welded systems resulting in overall cost savings of up to 65%. Tube-Mac is innovative, reliable and committed to providing exceptional service along with the highest quality products. The company's belief is that its future is in its customers' success.

### UKCG Group Ltd.

[www.uk-cg.com](http://www.uk-cg.com)

UKCG specializes in a range of carbon and graphite products backed up by an expert technical team. UK Carbon & Graphite (U.K.) and UKCG Technical Services (USA) offer complete technical solutions and EAF optimization. Our product range includes electrodes for EAF/LMF applications up to 28 inches in diameter. We provide technical services at no additional cost, reducing overall melting costs and increasing productivity. UKCG's expert team goes beyond monitoring and troubleshooting electrode parameters and offers full technical regulation analysis, recommendations and adjustments to improve furnace operation. Our service is based not only on identifying the problem, but on giving the best efficient solution and helping our customers to reach it.

### UMECC

[www.umecc.com](http://www.umecc.com)

UMECC provides a wide range of high-quality products to the steel industry, direct from the manufacturer. Our offerings include all major metallurgical equipment, spare parts and refractories. We are the local extension of our Chinese manufacturers who operate a large variety of manufacturing facilities and are leading companies in their respective fields. UMECC actively manages the entire order fulfillment process, both on-site in China and at the customer's location, assuring conformity, quality and timely delivery. Please stop by, meet our Chinese producers, and find

out how we can enhance your operation by seamlessly bringing the global marketplace to your local business.

### Unifrax

[www.unifrax.com](http://www.unifrax.com)

Unifrax is a global leader in the development and manufacture of high-temperature specialty products, including Foamfrax insulation and Silplate lining systems. Foamfrax insulation is an advanced, high-temperature technology for fast and easy furnace lining maintenance. It provides substantial improvement in thermal performance, energy efficiency and fuel savings, and overall cost savings. Silplate insulating boards and coating materials can withstand high temperatures while maintaining high compressive strength and low thermal conductivity. Silplate coating materials enhance fiber linings to withstand wind/particulate exposure, physical abuse and chemical attack. For more information, contact Unifrax at +1.716.768.6500 or visit [www.unifrax.com](http://www.unifrax.com).

### Unilux

[www.unilux.com](http://www.unilux.com)

Unilux will display its innovative Edge Tech system and comprehensive line of LED and xenon stroboscopic lights used by leading steelmakers worldwide. Remotely operated Edge Tech combines video capture and strobe light technologies to enable operators to see and fix defects on strip edges. The new Unilux LED2000 Series strobe light family combines operational and environmental benefits of LEDs with the power of xenon-based strobes and includes six models. Strobes and smart controllers synced to mill lines provide the flexibility to inspect 100% of the strip at full production speed, revealing defects in real time and reducing scrap and downtime. The option of handheld or fixed-mount units allows inspection in open or tight areas, eliminating costly and inefficient secondary inspection.

### Union Electric Steel Corp.

[www.uniones.com](http://www.uniones.com)

Union Electric Steel and Union Electric Steel UK are leaders in the



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Foamfrax® Insulation provides a fast, easy way to insulate or upgrade your furnace lining and realize

**Foamfrax™** exceptional energy savings. Foamfrax Insulation can be

used as an efficient monolithic refractory back-up. It can also be gunned directly onto metal, refractory or fiber surfaces, often times eliminating the need for a complete tear-out.

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Silplate® insulating boards and coating materials can withstand high temperatures while maintaining high compressive strength and low thermal conductivity. Silplate's physical properties do not change, even under the highest operating temperatures, assuring physical stability to the complete refractory system. Silplate coating materials enhance fiber linings to withstand wind/particulate exposure, physical abuse and chemical attack. These high performance products are ideal for a variety of demanding applications across all industries.



**For More Information**  
View application videos at Foamfrax University on YouTube, visit the Unifrax website, or call 716-768-6500.

**UNIFRAX**  
[www.unifrax.com](http://www.unifrax.com)

forged and cast roll industries, with more than 200 years of combined manufacturing experience. Over the past decade, our companies have integrated technologies, research and development, quality assurance, marketing, after-sales service and support, and other disciplines. Our combined capacity exceeds 60,000 tons of rolls annually. We welcome your visit to our booth to discuss your mill roll requirements.

### United Rolls

[www.whemco.com](http://www.whemco.com)

United Rolls Inc., located in Canton, Ohio, USA, and a roll industry leader for more than 100 years, offers horizontally spun cast-iron and high-chrome iron rolls for hot strip, cold strip, plate, and roughing stand applications in the ferrous and non-ferrous metals industry. Recent technology advancements have resulted in the SYNERGY product lines: SYNERGY 100 HSS hot finishing mill work rolls, SYNERGY 500 high-chrome steel roughing mill work rolls, and SYNERGY 700 modified HSS roughing mill work rolls. In 2013, we developed UR2-EC, a high-technology work roll designed to maximize mill efficiency through improved wear resistance and extended mill campaign life. We also provide sales and support services for long products mill rolls. Stop by our booth to talk with us about your mill roll needs.

### Universal Plant Services

[www.universalplant.com](http://www.universalplant.com)

Universal Plant Services (UPS) offers a single, comprehensive source for all your facility's fixed and rotating equipment installation and repair needs. Customers trust UPS with their business-critical process equipment due to our uncompromising commitment to safety, quality, the in-depth knowledge of our expert craftsmen, and innovative solutions to their repair or maintenance needs. Headquartered in Deer Park, Texas, with a regional facility in Indiana and 10 other full-service facilities located throughout the United States, UPS can assist you with innovative solutions to your turnaround and maintenance needs. We

will keep your facility maintenance costs low while ensuring your machinery and equipment are reliable, safe and efficient.

### Vail Rubber Works Inc.

[www.vailrubber.com](http://www.vailrubber.com)

Vail Rubber Works Inc. is a full-service roll shop specializing in elastomeric roll coverings. With headquarters and manufacturing in St. Joseph, Mich., Vail now has a complete manufacturing location in Middletown, Ohio, and a future home in the Mobile, Ala., area to serve the Southeastern United States. Our fleet of trucks provides pickup and delivery services to many locations in the Midwest and Southeastern United States. We offer turnkey service, providing new and repaired roll cores and millwright work. Featured this year will be Z-Series™ roll coverings, a sample of HVOF thermal spray for journal repair and miscellaneous parts, and a working model of a non-woven vacuum roll system manufactured by Masroll.

### Velco GmbH

[www.velco.de](http://www.velco.de)

For 40 years, Velco has been a reliable partner for the iron, steel and refractory industry. Velco supplies stand-alone refractory gunning machines and tailor-made gunning manipulators for the hot repair of EAFs, ladles, RH snorkels, etc. Using Velco's patented Gunmix® moistening system, it is possible to improve dry gunning, giving lower dust and rebound. Velco also produces pneumatic transport equipment for the injection of carbon and lime at the EAF, for the slag foaming process, or for analysis correction and desulfurization at the ladle furnace. For the repair of local hot spots at the blast furnace, Velco offers equipment by which Rutilit (a synthetic TiO<sub>2</sub> carrier from Sachtleben Chemie) is injected into the BF tuyere without stopping the BF operation.

### Veolia Water Technologies

[www.veoliawaterstna.com](http://www.veoliawaterstna.com)

Veolia Water Solutions & Technologies has a long history of providing creative,

cost-effective water and wastewater treatment solutions, specialized technologies and resource management expertise to the steel industry. We provide integrated treatment systems for supply water, contact and non-contact cooling circulation loops, coal yard runoff and wastewater, as well as recovery of in-process resources such as alkaline cleaners. Our services range from chemical supply, system troubleshooting, mobile water treatment, water studies and pilot testing to full-scale design-build projects, operator training, system start-up and operation contracts. Our experience with the operational challenges of industrial water systems enables us to eliminate potential problems during system design.

### Vesuvius USA

[www.vesuvius.com](http://www.vesuvius.com)

Vesuvius is a global leader in the development, manufacture and marketing of high-performance specialty refractory solutions and flow control systems and services for demanding industrial applications. Serving the iron and steel, foundry, glass and other industries. Vesuvius provides iron and steel customers with a full range of engineered refractory products and installation services to meet their production needs. Vesuvius is dedicated to serving our customers' sophisticated processes where productivity, quality and yield are necessary for a competitive edge. Refractory solutions are focused on enhancing customer performance, reliability and safety standards while reducing their production costs to deliver a competitive advantage.

### Vista Control Systems

[www.vista-control.com](http://www.vista-control.com)

The level 2 Vsystem® gives speed, flexibility, openness and customer support — developers answer the telephone. The Vsystem architecture is analogous to plug-in hardware in which each component serves a defined function of the whole system, making development, testing and maintenance easier. In addition, the architecture allows the system to also serve as a training system. We support Windows, Linux,



Solaris and VMS, and these can be mixed, giving choices between popular and secure platforms. The company gives the best and most responsive support in the industry — critical when issues hamper production and important to ensure the product and productivity. Scanners for all versions include Allen Bradley, Modbus and Siemens.

### Voith Turbo Inc.

[www.usa.voithturbo.com](http://www.usa.voithturbo.com)

Voith Turbo designs, manufactures and services the world's most reliable torque-transmitting equipment in every rotating equipment industry. Products include high-torque universal joint shafts (up to 1,300-mm swing), torque-limiting safety couplings, and temporary and permanent torque diagnostic/condition monitoring equipment. The Voith

Safeset product is one of the most accurate and reliable torque-limiting safety couplings available, due to its unique hydraulic principle and function, which ensure accuracy to within  $\pm 7\%$  of the set torque point. Finally, Voith's temporary and permanent torque measuring equipment can be adapted to meet your specific needs. Voith Turbo has sales and service facilities in more than 40 countries, ensuring complete customer support worldwide.

### Vollmer America Inc.

[www.vollmeramerica.com](http://www.vollmeramerica.com)

Vollmer GmbH will have the latest operational information about our new Model VTLG Laser Thickness Gauge that has the accuracy, response time and reliability to perform on cold rolling mills in normal production environments. Vollmer provides

a complete line of measurement and control equipment for the metals industry, including contact and non-contact continuous thickness gauges, contact and optical flatness measurement and control equipment, hydraulic rolling mill upgrades, and inspection equipment for specialty applications. Vollmer can provide complete measurement, control and statistical process control integrated systems for cold rolling mills. Our staff of trained and capable field service technicians are able to provide ongoing support for our products. Please visit our booth to discuss your standard and special measurement needs.

### VUHZ a.s.

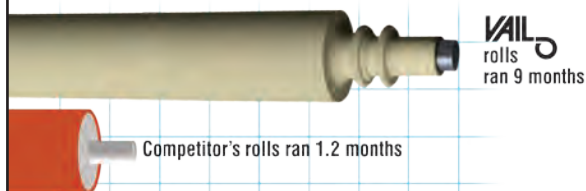
[www.vuhz.cz](http://www.vuhz.cz)

VUHZ is a leader in eddy current electromagnetic mold level measuring systems of continuous casting machines

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for slabs and blooms. VUHZ MLM System was developed in the National Research Institute of Iron and Steel in the Czech Republic. The VUHZ MLM System is installed in more than 100 steel plants worldwide. It is compatible with MEMS and EMBR. VUHZ is also a producer of stopper rod drives and AMLC software with autostart.

### Walker Magnetics

[www.walkermagnet.com](http://www.walkermagnet.com)

Walker Magnetics is a leader in providing magnetic material handling solutions. Whether your requirement is to move scrap, billets, slabs, plate, coils, bundles, pipe, structurals or high-temperature materials, Walker systems are specifically engineered and manufactured to efficiently move your material. Walker also rebuilds all makes and models of magnets. All repairs are guaranteed to meet or exceed the original manufacturer's specifications. Not only does Walker repair the magnet, it analyzes the cause of failure and what can be done to increase the life of the magnet. Walker has more than 115 years of experience working with steel mills and with a panel of the most experienced engineers in the business. Sales engineers will be available to discuss your magnet system requirements.

### Watteredge LLC/Flohe

[www.watteredge.com](http://www.watteredge.com)

Watteredge LLC, headquartered in Cleveland, Ohio, is a leading manufacturer of battery and custom bus bar copper connectors, engineered furnace secondary power connectors, bus bar systems, laminated shunts, water-cooled power cables, resistance welding cables, high-current DC switches, industrial rubber hose and tubing, and a wide variety of custom-engineered products. Our standards for material, manufacturing and inspection ensure the highest-quality parts and accessories. Our dedication to quality is guaranteed by our ISO 9001:2008 registered status. Watteredge LLC reports to Southwire Co., a leading North American manufacturer of wire and cable used in

the distribution and transmission of electricity.

### West Virginia Development Office

[www.WVDO.org](http://www.WVDO.org)

West Virginia Development and its proximity to Pittsburgh, Pa., are rooted in the history of steelmaking. Whether it is manufacturing, treating or shaping steel, West Virginia Development embraces the industry. West Virginia Development provides:

- One of the lowest costs of doing business.
- Utility rates among the lowest in the nation.
- A strategic location within an eight-hour drive to more than half the U.S. population and more than one-third of the Canadian market.

Visit our booth, or contact us for more information at [www.wvdo.org](http://www.wvdo.org) or +1.800.982.3386.

### WHEMCO Inc.

[www.whemco.com](http://www.whemco.com)

WHEMCO Inc., headquartered in Pittsburgh, Pa., is the consolidation of North America's leading mill builders and roll manufacturers, including Mesta Machine, Blaw Knox Mill & Foundry, Mackintosh Hemphill, Teledyne Ohio Steel and others. The assets of these companies have been efficiently organized into six operating companies supplying large castings and forgings to the metals, mining and power generation industries and to other heavy industrial applications around the world. Our companies offer the most respected technical support services available for all our roll and slag pot products. Stop by our booth to learn more about the WHEMCO companies.

### WHEMCO Ohio Foundry

[www.whemco.com](http://www.whemco.com)

Located in Lima, Ohio, WHEMCO Ohio Foundry is one of North America's largest iron foundries and has been in operation for more than 100 years. Our products include vertically spun and static cast-iron and

high-chrome iron rolls for hot and cold rolling applications in the ferrous and non-ferrous metals industry. We also statically cast large iron backup rolls for temper rolling applications. Our new enhanced carbide G2EC rolls are providing outstanding performance in a variety hot mill finishing stands, and our investment in research and development is ongoing. Stop by our booth to talk with us.

### WHEMCO Steel Castings Inc.

[www.whemco.com](http://www.whemco.com)

With plants in Midland, Pa., and West Homestead, Pa., WHEMCO Steel Castings is a world-class producer of large, alloy-steel custom castings for the metals, mining and power generation industries. The company is best known for supplying high-performance cast steel backup rolls and our proprietary best-in-class MA slag pots. Recent developments include POWERBUILT backup rolls designed for rolling advanced high-strength steels and a family of steel rolls for certain long product rolling applications. We offer superior performance through advanced casting and heat treatment technology. Stop by our booth to talk with us.

### Whiting Corp.

[www.whitingcorp.com](http://www.whitingcorp.com)

Whiting Corp. is a leading custom manufacturer of overhead double-girder and gantry cranes, transfer cars, turntables, hoists, trolleys and in-ground/portable lift equipment. Replacement parts are available. Capabilities include load testing and certification, planned and emergency repairs, maintenance, electrical and mechanical field training, modernization, engineering and installation. ISO 9001:2008 certified.

### Whiting Equipment Canada

[www.whiting.ca](http://www.whiting.ca)

Whiting Equipment Canada is a wholly owned subsidiary of Whiting Corp., Monee, Ill. The company and its subsidiary manufacture meltshop and material handling equipment, including electric arc furnaces, ladles,

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transfer cars, charge buckets, EAF control upgrades, tilting stands, AOD systems and overhead traveling cranes. The Whiting booth will be staffed with specialists ready to discuss the technical aspects of your future projects, along with Whiting's engineering and manufacturing capabilities.

### Winkle Industries Inc.

[www.winkleindustries.com](http://www.winkleindustries.com)

Since 1949, Winkle Industries has been a trusted and leading worldwide supplier of below-the-hook magnetic and mechanical lifting devices, mechanical and electrical crane products, ground-mounted material handling and processing equipment, and aftermarket services for various industrial markets. Through our field service affiliate, LiftTech, we provide installation and commissioning, maintenance inspections and service planning, field service and repairs, as well as training programs. Be sure to ask about LiftTrax, an inspection and maintenance planning program, and LiftSafe, a mechanical integrity program. Both programs provide a systematic single-source approach to maintenance planning to increase safety and reliability, while reducing liability.

### Franz Woelfer Elektromaschinenfabrik Osnabruck Gmbh

[www.woelfer-motoren.com](http://www.woelfer-motoren.com)

For more than 60 years, Franz Woelfer Elektromaschinenfabrik Osnabrueck GmbH has developed and manufactured customized three-phase low-voltage motors, especially for frequency inverter operation. As we can provide a 1-to-1 drop-in motor, no mechanical adjustments are necessary for changing from DC motor to AC motor. This minimizes downtime, which also leads to lower cost. Additionally, our motors provide a pullout torque of up to 400%. A further special skill of Woelfer motors is the customized winding. Finally, all kinds of monitoring equipment can be provided, like temperature monitoring for winding and bearing, vibration monitoring, etc. Visit our

booth to discuss the requirements of your applications.

### Xtek/Bradley Lifting

[www.xtek.com](http://www.xtek.com)

Xtek is focused on providing the steel and aluminum industries with value-added mechanical components for rolling mills, cranes and other material handling applications. Xtek designs, manufactures and services gear spindle couplings, custom gearing, gearboxes, universal joints, forged mill rolls, pinch rolls, crane wheels, brake wheels, sheave wheels, hook block assemblies and rope drums. Xtek's manufacturing and repair facilities are located in Cincinnati, Ohio, and Hammond, Ind., USA; Hamilton, Ont., Canada; and Plzen, Czech Republic. All ISO 9001:2008 certified. Xtek is an employee-owned company with worldwide sales offices and is the parent company of Bradley Lifting Corp., an industry leader in below-the-hook lifting equipment. Visit us at [www.xtek.com](http://www.xtek.com) or [www.bradleylifting.com](http://www.bradleylifting.com).

### Yates Cylinders

[www.yatesind.com](http://www.yatesind.com)

Yates Cylinders is a manufacturer of hydraulic and pneumatic cylinders, as well as one of the largest and most complete cylinder repair facilities in the Midwest. Our manufacturing capabilities are cylinder designs of NFPA, tie-rod, welded mill-type, welded construction, bolted head and specials per customer requirements. We can manufacture and repair cylinders with bore sizes up to 40 inches in diameter. Yates Industries has in-house engineering, CNC machining, manual machining, welding, assembly and testing. We also have a complete inventory of raw materials and an extensive seal inventory. Our two locations (St. Clair Shores, Mich., and Decatur, Ala.) both have a 24/7/365 emergency service that can be reached at +1.800.340.6024.

### Yoder – a member of the Formtek Group

[www.formtekgroup.com](http://www.formtekgroup.com)

Yoder is a member of the Formtek Group. Formtek is a group of long-established metal-forming equipment manufacturing companies, each with a well-known name and a history of providing innovative and reliable equipment to the metal forming and metal processing industries. For more information, contact [yoder@formtekgroup.com](mailto:yoder@formtekgroup.com) or call +1.800.631.0520.

### Zhuzhou Cemented Carbide Works USA Inc.

[www.zcc-america.com](http://www.zcc-america.com)

Zhuzhou Cemented Carbide Group (ZCC) is a leading manufacturer of high-quality carbide rolls and other carbide tools and engineering parts for steel mill rolling and other industrial applications. With nearly 60 years of experience and know-how in producing cemented carbide products, ZCC can supply all kinds of carbide rolls for rolling wire rods, round bars, rebars, flat bars, angle bars and tubes, with block rolls, pinch rolls, guide rolls, tube rolls and cold rolls, in intermediate stands, pre-finishing stands, finishing stands, and reducing and sizing stands. ZCC can combine its high-quality carbide rolls and end users' rolling condition to be a competent and qualified supplier in the steel industry. ♦



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From continuous casters and melt shops to hot and cold mills to galvanizing lines and coke plants, Yates Cylinders are working hard in all areas of the steel industry—designed and manufactured to stand up to the rigorous environment these cylinders must endure every day.

High heat, debris and dirt are some of the factors our series of Mill Duty, Tie Rod and Round Body Welded cylinders overpower daily in a steel mill.

Yates works closely with many companies to help solve their cylinder failures, first determining the cause and in many cases recommending upgrades for a rebuilt cylinder. This process not only eliminates the original problem, it also offers an extended life for the cylinder at a fraction of the cost of a new one.

With three regional locations offering full service capabilities (engineering, welding machining, grinding and assembly) and around-the-clock service, Yates is one of the largest and most complete cylinder manufacturing and repair companies in the country.

### **YATES INDUSTRIES, INC.**

23050 Industrial Dr. E.  
St. Clair Shores, MI 48080  
Phone: 586.778.7680  
Fax: 586.778.6565  
sales@yatesind.com

### **YATES CYLINDERS, AL.**

55 Refreshment Place  
Decatur, AL 35601  
Phone: 256.351.8081  
Fax: 256.351.8571  
decatur@yatesind.com

### **YATES CYLINDERS, GA.**

7750 The Bluffs  
Austell, GA 30168  
Phone: 678.355.2240  
Fax: 678.355.2241  
salesga@yatesind.com



**YOUR CYLINDER SOURCE™**

# AISTech Sponsorship Opportunities

A sponsorship is a cost-effective way to reach a new audience at Steel's Premier Technology Event for 2015. Be seen. Get noticed. Boost your business today!

## Global Event Sponsor

2 available or exclusive at TBD

### Sponsorship includes:

- Company logo on all major event signage, including Exhibit Hall entrance
- Recognition as global event sponsor on AISTech 2015 website, e-blast promotions and plenary event PowerPoint presentations
- Recognition at President's Award Breakfast, Town Hall Forum, and President's Reception and Dinner
- Unlimited passes for the Exhibit Hall
- Ten AIST memberships for 2015 (new members only)
- Exhibit Hall booth
- Full-page color ad in show issues (April, May) and post-show issue (August) of *Iron & Steel Technology*
- Full-page B&W ad in the On-Site Program distributed to all conference attendees
- Additional items for a complete marketing campaign, including a video display near entrance

YOUR  
LOGO  
HERE



## President's Award Breakfast

4 1 available at US\$15,000

### Sponsorship includes:

- Company logo or name on all President's Award Breakfast signage, including the breakfast program and the slideshow presentation prominently displayed on two large video screens
- Company logo on breakfast tickets
- Verbal acknowledgment from the AIST president at the conclusion of the event
- Tickets for one table of 10 at the breakfast
- Two registrations to attend the AISTech technical conference, including the Town Hall Forum
- Full-page B&W ad in the On-Site Program distributed to all conference attendees
- Full-page 4-color ad in the August issue of *Iron & Steel Technology*
- Five AIST memberships for 2015 (new members only)



## President's Reception and Dinner

4 2 available at US\$15,000

### Sponsorship includes:

- Company logo or name on all President's Reception and Dinner signage
- Introduction as a sponsor at the President's Reception and Dinner
- Cocktail napkins with logo
- Name recognition on the dinner menu
- Two invitations (including spouses) to attend the reception and dinner
- Two registrations to attend the AISTech technical conference, including the Town Hall Forum
- Full-page B&W ad in the On-Site Program distributed to all conference attendees
- Full-page 4-color ad in the August issue of *Iron & Steel Technology*
- Five AIST memberships for 2015 (new members only)



## Vehicle Giveaway Feature

Unlimited at US\$1,000 each

### Sponsorship Includes:

- Company logo on backdrop
- Company logo on AISTech 2015 website and in *Iron & Steel Technology*

See sponsor logos on page 253.

## Monday Welcome Reception

SOLD US\$3,500

### Sponsorship includes:

- B&W company logo on the napkins
- Premium signage at reception
- Half-page B&W ad in the On-Site Program distributed to all conference attendees





**SunCoke Energy™**

### Tuesday Reception

*Sponsorship includes:*

- B&W company logo on the napkins
- Premium signage at reception
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**SOLD US\$12,000**



**Thermo**  
SCIENTIFIC

### Town Hall Forum Coffee Break

*Sponsorship includes:*

- Company name or logo on the signage at coffee break location
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Table to supply logoed cups as giveaways (optional)

**4 3 available at US\$3,500**



**HERR-VOSS**  
STAMCO

**Berry**  
METAL COMPANY

### Town Hall Forum Lunch

*Sponsorship includes:*

- B&W company logo on the napkins at lunch stations
- Signage on lunch tables
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**6 1 available at US\$3,500**

**REA JET**  
REAL DEMANDS. REAL SOLUTIONS.

**Nidec**  
—All for dreams



**NORTH AMERICA, INC.**



**CONDUCTIX**  
wampfler  
© DELACHAUX GROUP

### Town Hall Forum Video

*Sponsorship includes:*

- Signage and recognition at the Town Hall Forum
- Inclusion of two 15-second commercial messages in the PowerPoint presentation before the event and during the coffee break

**4 3 available at US\$5,000**



**UK**  
**CG**

### On-Site Program

*Sponsorship includes:*

- Company logo on the front cover of the On-Site Program distributed to all conference attendees
- Full-page 4-color ad on the back cover of the On-Site Program

**SOLD US\$7,500**



**EMPCO**  
INNOVATIVE TECHNOLOGY FOR STEEL

### On-Site Program Bookmark

*Sponsorship includes:*

- 4-color ad on the front and back of a 2 x 9-inch perforated bookmark in the On-Site Program distributed to all conference attendees

**SOLD US\$2,500**



**ace**  
World Companies  
Overhead Cranes, Components  
and Engineered Systems

### Exhibitor Guide

*Sponsorship includes:*

- Company name or logo on the front and back of the Exhibitor Guide distributed to all conference attendees

**SOLD US\$4,000**



**DANIELI**

### Hotel Room Keycards

*Sponsorship includes:*

- Company logo and message on hotel room keycards
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**3 2 available at US\$5,000**





**AIST Service Center Internet Café and Giveaway Feature: Tablet**

**SOLD US\$7,500**

*Sponsorship includes:*

- Company logo featured on the desktop screens of PCs with Internet and email access
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Tablet giveaway
- Eight-foot table to display marketing materials



**Exhibit Hall Giveaway Feature: iPad and US\$500 Best Buy Gift Card**

**SOLD US\$7,500**

*Sponsorship includes:*

- Company name and logo on signage at the feature
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Company logo on the sign hung directly above the feature
- iPad and US\$500 Best Buy Gift Card Giveaway
- Eight-foot table to display marketing materials



**Exhibit Hall Giveaway Feature: Microsoft Surface Tablet**

**SOLD US\$5,000**

*Sponsorship includes:*

- Company name and logo on signage at the feature
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Company logo on the sign hung directly above the feature
- Microsoft Surface Tablet giveaway
- Eight-foot table to display marketing materials



**Show Floor Internet Café**

**US\$4,000**

*Sponsorship includes:*

- Company logo featured on the desktop screens of PCs with Internet and email access
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Giveaway TBD
- Eight-foot table to display marketing materials



**Exhibit Hall Giveaway Feature: Large-Screen TV**

**US\$5,000**

*Sponsorship includes:*

- Company name or logo on signage at the feature
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Company logo on the sign hung directly above the feature
- Large-screen TV giveaway
- Display of company's new products and services on the TV
- Eight-foot table to display marketing materials



**Exhibit Hall Giveaway Feature: Golf Clubs and Bag**

**SOLD US\$5,000**

*Sponsorship includes:*

- Company name or logo on signage at the feature
- Half-page B&W ad in the On-Site Program distributed to all conference attendees
- Company logo on the sign hung directly above the feature
- Golf clubs and bag giveaway
- Daily putting contests for a chance to win a putter
- Eight-foot table to display marketing materials





### Pens

*Sponsorship includes:*

- Company-supplied pens staged at all registration tables for attendee use (AISTech Show Management must approve pens prior to distribution)
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**SOLD US\$4,000**



### Event Bags

*Sponsorship includes:*

- Company-supplied bags (no plastic) placed in the AISTech registration area for attendee utilization (AISTech Show Management must approve bags prior to distribution)
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**SOLD US\$4,000**



### Lanyards

*Sponsorship includes:*

- Company-supplied lanyards placed at the AISTech registration counter for attendee utilization (AISTech Show Management must approve lanyards prior to distribution)
- Half-page B&W ad in the On-Site Program distributed to all conference attendees

**SOLD US\$4,000**



### Online Registration Page

**2 1 available at US\$3,500 per position**

*Sponsorship includes:*

- Top Position sponsorship includes company banner at the top of six online registration pages, and AISTech.org registration home page **SOLD**
- Bottom Position sponsorship includes company banner at the bottom of six online registration pages, and AISTech.org registration home page



### Online Floor Plan Banner Ads

**3 2 available at US\$2,000**

*Sponsorship includes:*

- Company banner ad placed at the bottom of online floor plan



### AISTech 2015 Smartphone App

**SOLD US\$7,500**

*Sponsorship includes:*

- Company logo on the home page of the smartphone app, with exposure prior to and during AISTech 2015
  - App will be available on AIST.org, AISTech.org and numerous marketing pieces
  - Available for Apple and Android
- Half-page B&W ad in the On-Site Program distributed to all conference attendees



### Plant Tour and Coffee

**SOLD US\$3,000**

- ArcelorMittal Cleveland
- Charter Steel – Cleveland
- TimkenSteel Corp. – Faircrest Plant

*Sponsorship includes:*

- Coffee station from 6:30 to 7:30 a.m. day of tour
- Eight-foot table with four feet available for promotional brochures (sponsor can provide logoed cups)
- Signage at bus area and on bus
- Half-page B&W ad in the On-Site Program distributed to all conference attendees



YOUR  
LOGO  
HERE

### Airport Shuttle/Baggage Check Area

2 available at US\$4,000

- Shuttle will be available Wednesday, 6 May, 4 to 8 p.m.
- Baggage Check will be available Wednesday, 6 May, 8 a.m. to 7 p.m.

*Sponsorship includes:*

- Eight-foot table for promotional brochures
- Company name and logo on signage in specific areas
- Half-page B&W ad in the On-Site Program distributed to all conference attendees



### AISTech Proceedings on Flash Drive

SOLD US\$3,500

*Sponsorship includes:*

- Company logo on the back of the flash drive distributed to all Technical Conference registrants
- Banner ad on flash drive main menu linking to the company website



YOUR  
LOGO  
HERE

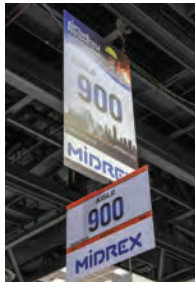
### NEW! Phone Charge Kiosk

10 available at US\$3,000

- 1 located in Technical Session area
- 2 located in the Exhibit Hall

*Sponsorship includes:*

- Inclusion of one 30-second commercial message on a 30-inch monitor at each charging station; commercials will loop continuously during the conference and exhibit hours.



### Aisle Signage

17 7 available at US\$2,500 per aisle

*Sponsorship includes:*

- Company logo on the bottom of selected aisle sign

Aisle 1300



Aisle 1400



Aisle 1500



Aisle 1600

AVAILABLE

Aisle 1700

AVAILABLE

Aisle 1800



Aisle 1900



Aisle 2000

AVAILABLE

Aisle 2100



Aisle 2200



Aisle 2300



Aisle 2400

AVAILABLE

Aisle 2500



Aisle 2600



Aisle 2700



Aisle 2800



Aisle 2900

AVAILABLE

**Check AISTech.org frequently for new opportunities and the latest updates!**

For more information about AISTech sponsorship opportunities, contact [sales@aist.org](mailto:sales@aist.org).

All sponsorships include company logo on a sponsorship sign placed in the registration area, company name in a slideshow presentation at the AIST President's Award Breakfast, and recognition on the sponsorship page of AISTech.org, in the May Show Issue and in the August post-conference issue of *Iron & Steel Technology*.

Truck provided by



# AISTech<sup>®</sup> 2015 & ICSTI

## TRUCK GIVEAWAY

Visit booth #2701 and enter to win a BRAND-NEW, FULLY LOADED 2015 Chevrolet Silverado.\*  
The final drawing will be held in the Exhibit Hall at 11:45 a.m. on Wednesday, 6 May 2015.

\*Estimated cash value:  
US\$45,000.  
Actual truck may differ.

Visit [AISTech.org](http://AISTech.org) for official rules.



Must be present at final drawing to win! **One entry per person!**

Visit pages 248–252 to learn about AISTech sponsorship opportunities.

MUST REGISTER FOR AISTECH 2015 IRON & STEEL TECHNOLOGY CONFERENCE AND EXPOSITION. NO PURCHASE NECESSARY TO REGISTER. VOID WHERE PROHIBITED. Sweepstakes runs from 9:00 AM EST on 4 May 2015 through 11:45 AM EST on 6 May 2015 ("Sweepstakes Period"). Entrants must appear in person to register and to enter during Sweepstakes Period at the Cleveland Convention Center, 300 Lakeside Avenue, Cleveland, OH 44113. Winner randomly selected at end of Sweepstakes Period. Must be present to win. Odds of winning depend on number of entrants. One prize with value of \$45,000 awarded. Must be 18 years or older to enter. Sponsor and Promoter of the Sweepstakes is the Association for Iron and Steel Technology with an address of 186 Thorn Hill Road, Warrendale, PA 15086-7528. Sweepstakes subject to Official Rules.