

ABSTRACTS DUE BY AUGUST 15, 2010

**STEEL'S PREMIER TECHNOLOGY EVENT FOR 2011**



# **AISTech<sup>®</sup>** **2011**

**The Iron & Steel Technology  
Conference and Exposition**

**May 2–5, 2011  
Indiana Convention Center  
Indianapolis, Ind., USA**



**2011 Call for Papers, Extended  
Abstracts and Presentations**

## Abstracts due by August 15, 2010

**The Association for Iron & Steel Technology (AIST) is an international technical association representing iron and steel producers, their allied suppliers and related academia. AIST is dedicated to advancing the technical development, production, processing and application of iron and steel.**

AISTech 2011 — The Iron & Steel Technology Conference and Exposition is scheduled for May 2–5, 2011, at the Indiana Convention Center in Indianapolis, Ind. Abstracts for this major international conference are being sought now for presentation at the event and published in the proceedings.

AISTech 2011 will feature international technologies from the world over, allowing steel producers to compete in today's global market. If you are involved in the steel industry, you can't afford to miss this event. Whether you present, attend or exhibit, take advantage of this opportunity to discover ways to make your job easier and improve your productivity.

### International Exposure

All technical papers presented at the AISTech Conference are considered for publication in *Iron & Steel Technology*, AIST's monthly technical journal, with distribution to more than 13,000 recipients worldwide.

### Participant Opportunities

The AISTech Technology Conference program promotes the transfer of iron and steel technology by providing an international forum for authors to share ideas, experiences and knowledge of the industry. **We invite you to submit your abstracts for consideration.** AIST offers three opportunities to participate in the AISTech 2011 Iron & Steel Technology Conference. Choose the option that best suits your objectives and available resources.

#### Option 1: Technical Paper

Technical papers presented during the Technology Conference are subsequently considered for publication in the AIST monthly technical journal, *Iron & Steel Technology*. Selection of papers for publication is based on the following factors: recommendations from sponsoring Technology Committee members; technical content, quality and current interest; quality of figures (should not require extensive reworking); and peer review evaluations. Accepted papers will be published in the AISTech 2011 Conference Proceedings and are eligible for AIST Awards and Recognition, including the Hunt-Kelly Outstanding Paper Award, which features a \$5,000, \$2,500 and \$1,000 prize for the three highest-rated papers.

#### Option 2: Extended Abstract

In lieu of a comprehensive paper, an extended abstract may also be submitted for AISTech 2011. The extended abstract will be made available online, as submitted, to the conference attendees for 30 days following AISTech 2011. The submission must be two pages or less and include an introduction, proposal of project or technology, confirmed results and a conclusion.

*PLEASE NOTE: Extended abstracts will not be published in the AISTech 2011 Conference Proceedings, will not be eligible for publication in the Iron & Steel Technology monthly journal, and will not be eligible for any AIST Awards or Recognition.*

#### Option 3: Presentation Only Submission

Abstracts for Presentation Only are also being accepted for consideration for AISTech 2011.

*PLEASE NOTE: Presentations without a corresponding paper will not be published in the AISTech 2011 Conference Proceedings, will not be eligible for publication in the Iron & Steel Technology monthly journal, and will not be eligible for any AIST Awards or Recognition.*

### Copyright

A signed and completed copyright form must be submitted with the original technical paper. A written transfer of copyright is necessary under U.S. Copyright Law for AIST to grant permission to reprint from published volumes. However, the transfer of copyright from the author to AIST, as well as permission to publish, is implied in the act of submission of the technical paper.

### Student Presentations

Graduate and undergraduate students may present findings on completed research, research in progress, summer internship experience, university projects or co-op experiences on any of the topics included in this brochure. In addition, undergraduates can participate in a Student Project Presentation Contest. Advance registration is required and is limited to eight participants. For additional information visit the "Students" section under the "Schedule of Events" tab at [www.AISTech.org](http://www.AISTech.org).



## **PROGRAM DEVELOPMENT AND TOPICS**

AIST Conference programs are developed by Technology Committee members representing iron and steel producers, their allied suppliers and related academia. Committees focus on ironmaking, steelmaking, finishing processes, and various engineering and equipment technologies. Sessions currently being developed focus on the following topics:

### **SAFETY AND HEALTH**

Contractor safety management, railroad safety, electrical safety (including NFPA 70E), project safety management (including construction), lockout/energy isolation, fall protection, confined spaces, management systems, industrial hygiene (employee exposure monitoring, qualitative exposure assessments, biological monitoring, etc.), hazard communication (including GHS), local exhaust ventilation, technology (use of technology for safety improvements and/or new safety issues due to technology/automation), assessment of safety systems (audits, indicators, etc.) and success stories and/or lessons learned. The Safety and Health Technology Committee will volunteer to join other AIST Technology Committees in developing AISTech Safety sessions that specialize in their particular process.

### **ENVIRONMENTAL TECHNOLOGY**

Air quality including GHG rules, PM<sub>2.5</sub>, Hg, NO<sub>x</sub>, SO<sub>2</sub>, Title V updates, MACT standards. Water quality including TMDL, ELGs, water treatment and reuse, storm water pollution prevention. SOLID WASTE including RCRA, life cycle assessment, waste minimization and recycling. Other relevant topics are invited.

### **COKE MAKING**

Byproduct efficiency improvements; coal supply sourcing and blending; process improvements; energy optimization; coke quality enhancements; operating cost reductions; new coke production facilities and the refurbishments of existing facilities; refractory materials and installation advancements; repair/maintenance techniques and technology for extending the life of coke oven batteries and ensuring their manufacturing reliability; environmental process improvements; new sulfur removal facilities or reliability improvement projects; wastewater treatment projects; and emissions reduction projects.

### **IRON MAKING**

Blast furnace operations; campaign extension; environmental programs in ironmaking; maintenance programs for ensuring reliability; hearth and taphole design, monitoring and maintenance; blast furnace stoves, stove refractory and safe stove operation; ironmaking raw materials; waste oxides recycling; alternate and new ironmaking processes; blast furnace refractory and cooling system; ironmaking equipment design and improvement; ironmaking control and modeling.

### **ELECTRIC STEELMAKING**

Implementation of innovative safety programs and procedures; advances in energy efficiency, materials recovery and heat recovery and their associated impact on greenhouse gas generation; advancements in workplace environmental factors, including gas cleaning and mitigation of greenhouse gas generation; process analysis and optimization including new EAF technologies and advances in auxiliary systems such as arc regulation, oxygen and

solids injection, and water-cooled components; EAF revamping projects and start-up experience with new equipment; raw materials including scrap optimization, selection of alternative iron feed materials and yield maximization; associate development and training; EAF mechanical, hydraulic and electrical maintenance including primary, secondary and tertiary electrical components.

### **OXYGEN STEELMAKING**

BOF environmental controls, vessel slopping, secondary emissions, tapping practices and yield improvement, endpoint predictions, charge management, blast furnace/BOF strategies and coordination, plant culture, maintenance practices, and planning and energy conservation.

### **SPECIALTY ALLOY AND FOUNDRY**

Specialty steelmaking: Alloy and superalloy grade production; stainless steel; remelt process and innovations; refining requirements due to customer specifications; casting criteria; scrap segregation and residual controls; raw materials; foundry operations; safety improvements with specialty steelmaking; environmental regulations; energy conservation.

### **LADLE AND SECONDARY REFINING**

The processes of heating/cooling, chemistry control, slag treatment, desulfurization/decarburization, degassing, stirring, shape control and inclusion modification; utilizing the support systems of ladles; refractories and refractory repair; ladle transport; flow control; stirring systems; utilities; fume control; additions.

### **CONTINUOUS CASTING**

Thin and thick slab, bloom, beam blank, billet and near-net-shape casting machines; caster modeling; new and emerging innovations and technology in continuous casting; improvements and/or renovations in machine design to optimize operations relating to: safety, quality, productivity, reliability, energy, maintenance and the environment.

### **HOT SHEET ROLLING**

Hot sheet rolling mills and facilities: new, revamps or modernizations, including: ferrous-based (carbon, silicon, titanium or stainless steel) flat rolling and/or processing with new or revised technologies in width, thickness, shape, flatness, surface, temperature, productivity, yield and quality control. Other topics of interest include (but are not limited to): equipment design improvements; roll coolant and roll bite lubrication; processing new steel chemistries (TRIP, TWIP and dual-phase steels); steering and camber control; slab sizing and width control; descaling and surface improvement systems; edge drop control; productivity improvement and start-up learning curve programs; sensors and gauge systems specifically relating to hot rolling; furnace issues relating to the rolling process, design for safety and environment.

## **COLD SHEET ROLLING**

Sheet and tin cold rolling, temper/skinpass rolling, pickling, cleaning and annealing facilities: new, revamps or modernizations. Process modeling and equipment reliability studies. New or revised technologies for enhancing safety, energy efficiencies, cost, quality, productivity and yield of ferrous-based materials. Topics of interest include (but are not limited to): width, thickness, shape, flatness, edge drop, surface, temperatures, properties, steering and processing of new and/or special steel chemistries.

## **GALVANIZING**

Hot-dip galvanize, galvaneal, aluminized, new zinc alloy coating, and dual metallic/organic processes (new facilities and modernizations, productivity improvements, new equipment technologies), plus coated product substrate quality, defect prevention and detection, and new surface post-treatments.

## **TINPLATE AND ELECTROGALVANIZING**

Advancements applicable to the tin mill area and electrogalvanizing process. Topics of particular interest include: electroplating zinc and zinc alloys, tin, and chrome; bright reflow, surface passivation, and oiling; practices of cold rolling, continuous annealing, batch annealing, double cold reduction, temper rolling, surface inspection, bearing sealing, and conductor rolls and process rolls; waste treatment energy, conservation and other environmental issues.

## **PLATE ROLLING**

New plate rolling and finishing installations; discrete and Steckel processing; mill modernization, new equipment and technologies; automation upgrades; model developments in rolling and finishing; thickness, width and crown control; flatness control, measurement and correction; surface quality and inspection; scale removal; operational practices of reheat furnaces; and thermal mechanical rolling developments, including accelerated cooling.

## **ROD AND BAR ROLLING**

Safety innovations with rolling mill operations; new equipment and technologies; new installations and revamp of existing facilities; process and auxiliary equipment including gauging systems; shearing and handling equipment, guide systems and control systems; process and product development; defect inspection and product quality.

## **ROLLS**

Innovative roll manufacturing and roll testing, roll maintenance and inspection practices, roll use in the ferrous and nonferrous industries including pinch rolls, roll performance improvements, the relationship between rolls and product attributes (profile, flatness, surface, etc.), and roll surface defects and their effect on sheet quality reducing your environmental footprint.

## **METALLURGY – STEELMAKING AND CASTING**

Use of any system, approach, methodology or equipment to improve product quality, production and/or costs.

## **METALLURGY – PROCESSING, PRODUCTS AND APPLICATIONS**

The interrelation of production processes and product properties (dimensional and metallurgical) including liquid and solid steel processing, and products ranging from sheet and plate to tubular and long products, as well as finished components. Papers are also being sought for process metallurgy and product application of low-strength steels (LSS), high-strength steels (HSS) and advanced high-strength steels (AHSS) with focus on the fundamental aspects from microstructure features to mechanical properties. In addition, development of new process technologies and products is encouraged. Papers on process/product quality problems and control are also welcome.

## **ENERGY AND UTILITIES**

New developments and applications that promote increased productivity, energy efficiency in the generation, distribution or use of purchased fuels and combustion; byproduct gases; steam; industrial gases, compressed air, hydrogen, oxygen, etc.; electricity; lighting; heat recovery systems; boilers/furnaces; power plants; and water systems.

## **ELECTRICAL APPLICATIONS**

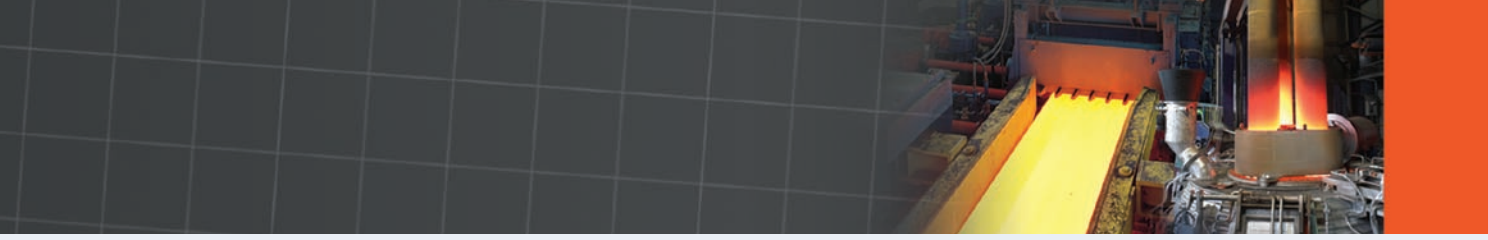
Design, application and/or engineering of power quality and distribution; AC/DC motor/drive technology; HMI systems; open architectural systems and other networks; electrical maintenance and electrical safety applications; and electrical upgrades/retrofits. Application of sensors for process control; efficiency and cost-effective solutions; on-line and off-line shape and flatness measurement; mechanical properties testing; automated surface inspection; oil thickness measurement; surface cleanliness; soft sensors (i.e., modeling of a variable that cannot be measured directly); and other unique sensors that provide new and innovative uses to the primary and finishing sides of the steelmaking process.

## **COMPUTER APPLICATIONS**

New and existing uses of computers to control, monitor and interface steelmaking processes; impact of human factors in process control (such as users, engineers and support personnel); manufacturing execution systems; network/wireless communications; the application of advanced process modeling and control; emerging trends in hardware and software related to process control as well as business systems, including operating systems, software products, novel application of vision systems, security; automation planning and software development methodologies; database, data warehousing and data mining systems; remediation of legacy automation systems.

## **PROJECT AND CONSTRUCTION MANAGEMENT**

Capital effectiveness; project safety performance; project planning and implementation approaches for new installations, retrofits and maintenance projects; project team alignment/team building; new technologies to aid the project team; risk assessment, commissioning and project closeout.



## **MAINTENANCE PROCESSES**

Reliability, planning and scheduling with maintenance activities; leadership, human resource development and training; contractual support; maintenance outsourcing; maintenance improvement initiatives; CMMS; predictive and preventive maintenance technologies or condition monitoring.

## **LUBRICATION AND HYDRAULICS**

Bearing technology; lubrication systems; lubricant technology (greases, oils, solid lubricants); hydraulic fluids and systems; fluid filtration and filter media; oil reclamation and refining; condition monitoring; plant lubrication programs; lubricant life and testing methods; sealing technology; gearing technology; electric motors lubrication; coupling lubrication and auto lube technology.

## **MATERIAL HANDLING**

Safety policies, procedures, and prevention with material handling; product tracking and identification; fleet management strategies; new material handling equipment; equipment/vehicle maintenance

strategies; scrap handling; government regulations impacting material handling; communication technologies; infrastructure maintenance of roads, tracks, bridges, etc.; and outsourcing of services.

## **CRANES**

Case studies detailing specific experiences with reducing costs; maintenance statistical data; new technology, installations, and product applications resulting in improved safety and productivity gains; better lubrication systems; latest global crane standards for overhead traveling cranes; and crane machinery replacements, modifications or improvements.

## **PACKAGING, SHIPPING AND TRANSPORTATION METHODS**

Safety procedures and innovations in packaging, shipping and transportation methods in all modes of transportation — including but not limited to infrastructure, ASTM standards, motor carriers, waterways, loading and packaging, open top loading rules, transloading, and governmental regulations.

## **Submission Timeline and Details:**

### **Abstract Submittal Deadline to AIST August 15, 2010**

Whether you are writing a technical paper, an extended abstract or a presentation, the first step is to submit an abstract for the Technology Committees to review. The subject matter should be of current interest to those in the iron and steel industry and should present new developments, methods or applications. Please limit your abstract to 100 words or less and include the following: paper title, author and co-author(s) contact information. The preferred method for submitting an abstract is online at [www.AISTech.org](http://www.AISTech.org).

### **Letter of Invitation From AIST to Selected Authors December 2, 2010**

The Technology Committees select abstracts of interest and organize them into sessions. If your abstract is selected, AIST will send you a formal letter of invitation. If your abstract is not initially selected, we will retain the abstract in case of cancellations in the program.

### **Final Author Acceptance Response Due to AIST January 4, 2011**

When you submit an abstract, it is assumed that you plan on attending AISTech 2011. To verify that, we require a response to our letter of invitation.

### **Technical Papers Due to AIST February 15, 2011**

Technical papers must be submitted to AIST by Feb. 15 to be considered for inclusion in the Conference Proceedings, which is given to all Technology Conference attendees via

CD-ROM. The “Author Guide,” which provides guidelines for preparing a technical paper for AISTech, can be found under the “Technical Program” tab at [www.AISTech.org](http://www.AISTech.org).

### **Author Registration Deadline March 1, 2011**

ALL authors are required to register for the Technology Conference in order to present and to have their technical papers published in the Conference Proceedings.

### **Presentation Draft Due to AIST March 15, 2011**

The presentation must be technical in nature; commercial presentations are not permitted. The “Author Presentation Template” can be found under the “Technical Program” tab at [www.AISTech.org](http://www.AISTech.org).

### **AISTech 2011 – Indianapolis, Ind., USA May 2–5, 2011**

A total of 30 minutes is allotted for each presentation. It is suggested that the formal presentation be approximately 20 minutes long, allowing 10 minutes for questions and discussion.

### **Abstract Submission Options:**



**ONLINE  
(PREFERRED)**

[www.AISTech.org](http://www.AISTech.org)



**VIA MAIL**

186 Thorn Hill Road  
Warrendale, PA 15086 USA



**VIA E-MAIL**

[abstracts@aist.org](mailto:abstracts@aist.org)

## A Message From the AISTech 2011 Conference Planning Committee Chair

*AISTech 2010 arrives in Pittsburgh, Pa., amid continuing economic uncertainty. While signs of a gradual movement upward are visible, the current lean manufacturing in the iron and steel industry means an increasing reliance on process improvement without sacrificing gains in safety, environmental stewardship or product quality.*

*AISTech 2010 will once again provide insight and information on these topics and many more, with technical papers, presentations, supplier exhibits and the Town Hall Forum.*

*The road to recovery, and a prosperous future, is paved with technological advancements. The collaborative participation at AISTech, through networking and the presentation of new ideas, is crucial not only for sustainability, but for the consistent progress of the iron and steel industry as well.*

*AISTech 2011 will be held May 2–5 in Indianapolis, Ind., just a few weeks prior to the 100th anniversary of the first Indianapolis 500 on Memorial Day weekend. The AIST Technology Committees, membership and staff will continue to provide innovative technologies, best practices and insights into the steel industry's future.*

*I would like to take this moment, on behalf of everyone involved, to invite the iron and steel industry suppliers, producers and members of the education community to attend AISTech 2011 in Indianapolis. Expand your network, broaden your technical horizons and take advantage of the exceptional opportunities at steel's premier technology event of 2011.*

*Toni Brayton  
AISTech 2011 Conference Planning Committee Chair  
Process Safety Management Coordinator  
U. S. Steel Gary Works Coke & Chemicals Division*

# *Also coming in 2011...*

# MS&T'11<sup>®</sup>

## Materials Science & Technology 2011 Conference and Exhibition

OCTOBER  
16–20, 2011  
COLUMBUS, OH

Organized by: **ACerS** (The American Ceramic Society), **AIST** (Association for Iron & Steel Technology),  
**ASM** (ASM International<sup>®</sup>), **TMS** (The Minerals, Metals & Materials Society)



Association for Iron & Steel Technology  
186 Thorn Hill Road • Warrendale, PA 15086 USA  
Phone (724) 814-3000 • Fax (724) 814-3001 • [www.AISTech.org](http://www.AISTech.org)