

Call for Papers  
and Presentations



STEEL'S PREMIER TECHNOLOGY EVENT

# AISTech<sup>®</sup> 2015 & ICSTI

The Iron & Steel Technology  
Conference and Exposition

7<sup>th</sup> International Congress on the Science and Technology of Ironmaking

4-7 May 2015 • Cleveland Convention Center • Cleveland, Ohio, USA





## Call for Papers and Presentations

Abstracts due by 15 August 2014

AISTech 2015 — The Iron & Steel Technology Conference and Exposition is scheduled for 4–7 May 2015 at the Cleveland Convention Center in Cleveland, Ohio, USA. AISTech 2015 will host the 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. AISTech 2015 and ICSTI will include technical papers, keynote speakers and proceedings. Abstracts for this major international conference are being sought now for manuscripts to be presented at the event and published in the proceedings.

AISTech 2015 will feature technologies from all over the world that help steel producers to compete more effectively 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 papers presented at AISTech 2015 are considered for publication in *Iron & Steel Technology*, AIST's monthly technical journal, with distribution to more than 16,000 recipients worldwide. All papers presented are eligible for inclusion in the Conference Proceedings.

### PARTICIPANT OPPORTUNITIES: CALL FOR PAPERS AND PRESENTATIONS

The AISTech technical 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 two opportunities to participate in the AISTech 2015 Iron & Steel Technology Conference. Choose the option that best suits your objectives and available resources.

#### OPTION 1: TECHNICAL PAPER

Papers presented during this technical conference are subsequently considered for publication in *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 may be published in the AISTech 2015 Conference Proceedings and are eligible for AIST Awards and Recognition, including the Hunt-Kelly Outstanding Paper Award, which features a US\$5,000, US\$2,500 and US\$1,000 prize for the three highest-rated papers.

#### OPTION 2: PRESENTATION ONLY

Abstracts for Presentation Only are also being accepted for consideration.

*PLEASE NOTE: presentations without a corresponding paper will not be published in the AISTech 2015 Conference Proceedings, will not be eligible for publication in Iron & Steel Technology, and will not be eligible for any AIST Awards or Recognition.*



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 recognized as a global leader in networking, education and sustainability programs for advancing iron and steel technology.

The late Kent D. Peaslee (left), 2012–2013 AIST president, and Pallava Kaushik (right), 2013 Hunt-Kelly Award recipient.

## **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 & HEALTH**

Focused topics include but are not limited to: mobile equipment; material handling; crane and railroad safety; contractor and project safety management; electrical safety — NFPA 70E; lockout/energy isolation; fall protection; confined spaces; hazard communication including GHS; industrial hygiene; assessment of safety systems and reporting; and technology/automation innovations with safety and health.

### **ENVIRONMENTAL TECHNOLOGY**

Relevant topics include but are not limited to innovative technologies, regulatory drivers and operational issues pertaining to: AIR QUALITY including greenhouse gases, particulate matter, mercury, gaseous emissions, NAAQS, Title V updates, MACT standards; WATER QUALITY including permitting, stormwater pollution prevention, water treatment for makeup, process, water intake and industrial wastewater for reuse/discharge; SOLID WASTE MANAGEMENT including RCRA, CERCLA, life cycle assessment, waste minimization and recycling.

### **COKEMAKING**

Safety innovations; byproduct process improvements; coal supply sourcing and blending; control systems and automation; 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; coke plant equipment improvements; environmental process improvements; new sulfur removal facilities or reliability improvement projects; wastewater treatment projects; emissions reduction projects; and alternate cokemaking.

### **IRONMAKING**

Blast furnace operations; campaign extension; furnace relines/rebuilds; 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; DRI technology and alternate ironmaking technology; blast furnace refractory and cooling systems; 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 and safety innovations, maintenance practices, planning and energy conservation.

### **SPECIALTY ALLOY & FOUNDRY**

Alloy and superalloy grade production; stainless steel; remelt process and innovations; refining; casting processes; scrap segregation and residual controls; raw materials; refractories; foundry operations; safety improvements; environmental regulations; and energy efficiency.

### **LADLE & 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; refractory interactions with steel and slag; ladle transport; flow control; stirring systems; utilities; fume control; and 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 ferrous sheet rolling mills and facilities: new, revamps and modernizations. New or revised technologies in width, shape productivity, quality, etc. Processing new steel chemistries such as TRIP, TWIP and dual-phase. Steering and camber control.

### **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 advanced high-strength steels.

### **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 & ELECTROGALVANIZING**

Advancements applicable to tin mill and electrogalvanizing processes. Topics of particular interest include but are not limited to: process improvements, process control, new or emerging technologies, procedures/practices, process reliability, quality control, water treatment, energy conservation, recycling and other environmental opportunities.

### **PLATE ROLLING**

Operational practices of reheat furnaces; new plate rolling and finishing installations; discrete and Steckel processing; mill modernization, new equipment and technologies; automation upgrades to levels 1 and 2; product control through thickness, width, crown and flatness control; surface quality and inspection; yield improvement;

scale removal; thermal mechanical rolling developments, including accelerated cooling; heat treatment processes; and leveling, dividing, slitting and marking.

### **ROD & 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; personnel development and training.

### **PIPE & TUBE**

Safety advancement in the pipe and tubular products arena; industry requirements and specifications affecting the pipe and tube manufacturing process; pipe and tube alloys and their applications; pipe and tube connection technologies; pipe and tube inspection, testing and measurement advancements; pipe mill preventive maintenance; construction innovations; pipe and tube product quality and traceability; energy conservation and environmental challenges.

### **ROLLS**

Chock repair and bearing maintenance; roll manufacturing and roll shop safety; innovative roll manufacturing and roll testing; roll maintenance and inspection practices; roll use in the ferrous and non-ferrous industries, including pinch rolls; roll performance improvements; the relationship between rolls and product attributes (profile, flatness, surface, etc.); roll surface defects and their effect on sheet quality; and opportunities to reduce environmental footprint including roll shop waste.

### **METALLURGY — STEELMAKING & CASTING**

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

### **METALLURGY — PROCESSING, PRODUCTS & 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 being sought for process metallurgy and product application of low- and high-strength steels and advanced high-strength steels (AHSS), with focus on the fundamental aspects from microstructure to mechanical properties. Additional topics of interest include: development of new process technologies and products, process/product quality problems and control.

### **ENERGY & 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 steel manufacturing and processing; evolution of industrial control systems — hierarchies and mobile interfaces; modern control system technologies driving a safer workplace; the application of advanced process modeling and control; impact of human factors and safety in process control (such as users, engineers and support personnel); manufacturing execution systems and business systems; network/wireless communications; automation planning and software development methodologies; database, data warehousing, data mining systems and predictive analytics; remediation of legacy automation systems; cyber security for industrial control systems.

### **PROJECT & 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 & RELIABILITY**

Papers sought to support our mission of advancement and innovation of maintenance and reliability in the steel industry. Topics include planning, scheduling, preventive maintenance, predictive maintenance, condition monitoring, reliability, resource development/talent acquisition, resource utilization/optimization, CMMS, problem solving and new technologies. Papers should focus on strategies, tactics, initiatives and tools associated with reliability and maintenance activities that have resulted or will result in bottom-line improvements in plant operations.

### **LUBRICATION & 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.

### **REFRACTORY SYSTEMS**

Laboratory developments and evaluations of new refractory products and systems; field trials of new refractory products and systems in all areas of cokemaking, ironmaking, steelmaking, continuous casting, and finishing; effects of operational conditions or variables on the performances of refractory systems; recycling of used refractories into new refractory products.

### **COMMERCIALISM GUIDELINE**

Papers and presentations delivered at AIST-sponsored forums are intended to be technical in nature, with solutions supported by verifiable data. Commercially motivated commentary or endorsement of specific brands or companies is not acceptable. Each paper/presentation will be peer-reviewed by forum organizers to ensure compliance with this policy. If the paper/presentation is deemed to be in violation, the author/presenter will be notified by the forum organizer(s) and given the opportunity to revise the content or to withdraw the paper/presentation. To preserve and protect the interests of AIST, forum organizers will have the authority and the responsibility to stop any paper/presentation they determine to be in violation of this policy.

## MATERIAL HANDLING

Safety policies, procedures, strategies and prevention with material handling; product tracking and identification; fleet management strategies; material handling equipment; equipment/vehicle maintenance strategies; scrap handling; government regulations impacting material handling; communication technologies; automation technologies; infrastructure maintenance of roads, tracks, bridges, etc.; or 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.

## TRANSPORTATION & LOGISTICS

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.

## STUDENT PAPERS

Graduate or undergraduate students may present findings on completed research, research in progress, summer internship experience, university projects or co-op experiences on any of the subjects listed above. In addition, AIST holds a Student Project Presentation Contest for undergraduate students each year. For more information, visit the student activities section at AIST.org.

## SUBMISSION TIMELINE AND GUIDELINES

### Abstract Submittal Deadline

**15 August 2014**

Whether you are preparing a technical paper 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 and include the following information:

- Paper Title
- Author's Name
- Title
- Company Affiliation
- Complete Mailing Address
- Phone
- Email
- Co-Author Name(s)
- Title(s)
- Company Affiliation(s)

Submit abstracts online at [AISTech.org](http://AISTech.org)

### Letter of Invitation to Selected Authors

**5 December 2014**

If your abstract is selected, AIST will send you a formal letter of invitation. Once selected for the technical program, you will be sent additional information on how to prepare your paper for electronic publication. 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

**9 January 2015**

When you submit an abstract, it is assumed that you plan to register for and attend AISTech 2015. To verify that, we require a response to our letter of invitation.

### Technical Papers Due to AIST

**16 February 2015**

Technical papers must be submitted to AIST by 16 February 2015 to be considered for inclusion in the Conference Proceedings, which are made available to conference registrants. Papers presented during AISTech are subsequently considered for publication in the AIST monthly technical journal, *Iron & Steel Technology*. A signed and completed copyright form must also be submitted with the original manuscript. The "Author Guide," which provides guidelines for preparing a technical paper for AISTech, as well as a paper template, is available at AISTech.org.

### Presenter Registration Deadline

**2 March 2015**

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

**16 March 2015**

The presentation must be technical in nature; commercial presentations are not permitted. 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. When preparing your presentation, please use one of the PowerPoint presentation templates, which are available at AISTech.org.

### Questions?

Please contact Ken Landau at +1.724.814.3036 or [klandau@aist.org](mailto:klandau@aist.org).

**ICSTI 2015** — the 7th International Congress on the Science and Technology of Ironmaking will provide an open forum to present, discuss and achieve solutions to current ironmaking challenges and future ironmaking opportunities. The sessions will cover fundamental issues, encompassing physical-chemistry, kinetics, morphologies, mathematical models, transport phenomena, etc., and technical matters, including traditional and alternative raw materials, biomasses, conventional technologies, emergent processes and environmental addresses in ironmaking. Presentations will include invited keynote lectures as well as individually submitted papers.

### ICSTI Organizing Committee

- Pinakin Chaubal, ArcelorMittal Global R&D
- Prof. Jose Carlos D'abreu, Pontifical Catholic University of Rio de Janeiro
- Dr. Jean-Paul Gaillet, Centre de Pyrolyse de Marienau
- Ms. Beatriz Faust Gandra, USIMINAS
- Dr. Iakov Gordon, Hatch Ltd.
- Mr. Attilio Guillermo Graziutti, Tenaris Siderca
- Prof. Govind Gupta, Indian Institute of Science
- Mr. Alberto Hassan, International Iron Metallics Association
- Mr. Ashok Kumar, TATA Steel Ltd.
- Prof. Kazuya Kunitomo, Kyushu University
- Dr. Shiyung Lee, POSCO
- Mr. Oscar Lingiard, Ternium Siderar
- Dr. Hans-Bodo Lungen, Stahlinstitut VDEh
- Mr. Paulo Freitas Nogueira, Vale S.A.
- Dr. Jose Noldin, Lhoist Group
- Dr. Joseph Poveromo, RMI Global Consulting
- Prof. Veena Sahajwalla, University of New South Wales
- Prof. Henrik Saxen, Åbo Akademi University
- Mr. Masakata Shimizu, retired
- Dr. Viktor Stiskala, ThyssenKrupp Steel AG
- Prof. Cyrus Takano, University of São Paulo
- Dr. Kanji Takeda, JFE Steel Corp.
- Dr. Bernard Vanderheyden, CRM
- Dr. Jan-Olov Wikstrom, Swerea MEFOS
- Prof. Chenn Zhou, Purdue University – Calumet





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Today's Challenges. Tomorrow's Opportunities.

