



ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

TRAINING PROGRAMS FOR STEEL MANUFACTURING

This report highlights information about *training and related technical programs* for steel manufacturing as organized by the **ASSOCIATION FOR IRON & STEEL TECHNOLOGY (AIST)**.

The Association's objective for these programs is to provide relevant technical curricula in a low-cost format that is valued by the global steel industry. AIST fulfills this objective by pursuing the following goals:

- *Strength*: Build a relevant and global technical organization with active membership groups, quality publications and superior program content
- *Stability*: Create stability with diversified revenue through industry collaboration while avoiding duplication of services with other industry organizations
- *Growth*: Achieve sustainable growth with conservative revenue planning and a dominant market position

Further information is available at www.aist.org

Contact: Ronald E. Ashburn | Executive Director
Association for Iron & Steel Technology (AIST) | AIST Foundation
186 Thorn Hill Road | Warrendale, PA 15086 USA | Phone:+1.724.814.3062 | Fax:+1.724.814.3063

SUMMARY

- Not-for-profit international association headquartered in Pittsburgh, PA, USA
- 17,500+ individual members in 70+ countries
- 29 technology committees encompassing steel manufacturing spectrum
- 22 member chapters in 8 countries
- 200+ annual events with programming in 12 countries
- Mission: ***To advance the technical development, production, processing and application of iron and steel.***
- Vision: ***To be a global leader in networking, education and sustainability programs for iron and steel technology.***



Ironmaking

Steelmaking

Casting

Rolling

Processing



ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

PROGRAM OVERVIEW

Training Networks (see pages 4-9)

- 20+ AIST Practical Steel Training Seminars
- AIST Advanced Steel Technology Symposia
- AIST International Steel Academy
- AIST International Steel Study Tours
- AIST Italy Steel Forum
- AIST Steel Manufacturing 3-D Process Simulator
- AIST Leadership Conference
- Emerging Leaders Alliance
- AIST Process Benchmarker® (APB®)
- 29 AIST Technology Committees
- 22 AIST Member Chapters in 8 Countries

Major Technical Forums (see page 10)

- AISTech
- Materials Science & Technology
- CONAC
- Galvatech and CHS²

Awards and Recognition

- 10 Board of Director Awards
- 36 Technology Committee Awards
- 22 Member Chapter Awards
- T.C. Graham Prize

Next Generation

- Student Membership: 5,600+ from 500+ schools
- Student Chapters: 91 schools in 9 Countries
- University Scholarships & Grants (\$600,000+/year)
- Steel Industry Internships
- Steel to Students Program
- Junior Faculty Grants
- Young Professional Program
- Don Daily Health and Safety Grants
- AIST Foundation Video Challenge
- AISTech Student Project Presentation Contest
- AISTech Graduate Student Poster Contest

Other Member Resources

- *Iron & Steel Technology* magazine
- Digital Library with 10,000+ technical papers
- *Making, Shaping and Treating of Steel* series
- 100+ Industry Technical Publications
- 20+ Industry Maps
- Steel News published daily
- AIST Directory
- Social Media Platforms
- Corporate Partnership Program
- Combi-Membership Program
- www.aist.org



ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

Training Networks

AIST Practical Steel Training Seminars

Two-day to four-day courses: Fundamental curriculum developed by members based on industry need and relevance. Annual participation exceeds 2,000+ attendees.

- Safety and Health Technology
- Environmental Solutions: Systems Optimization
- Alternative Ironmaking and Scrap Substitutes
- Modern Electric Furnace Steelmaking
- Ladle Refractory and Secondary Steelmaking
- Specialty Alloy and Foundry
- Continuous Casting Fundamentals
- Hot Rolling Fundamentals
- Cold Rolling Fundamentals
- Galvanizing Workshop
- Process Line Fundamentals
- Rod and Bar Rolling
- Pipe and Tube Essentials for the Energy Market
- Operation & Maintenance of Particulate Control Equipment
- Water Management
- Steel Mill Combustion and Thermal Systems
- Process Systems Technology
- Asset Optimization Through Maintenance, Reliability, Lubrication and Hydraulics
- Maintenance Solutions
- Crane Symposium (held in USA, Slovakia and Argentina)

AIST Advanced Steel Technology Symposia

Two-day to four-day courses: Academic-level curriculum developed by the industry's leading experts.

- DRI: Logistics, Production and Utilization
- International Symposium on New Developments in Advanced High-Strength Sheet Steels
- International Symposium on the Recent Developments in Plate Steels
- Globetrotters: Mini-Mill Solutions

AIST International Steel Academy

Curriculum taught by world-class instructors and held around the world in conjunction with a host plant.

- **Making Shaping and Treating of Steel: 101**

Three-day course: This curriculum provides essential knowledge to those who do *not* have a technical background in metallurgical engineering, rolling or quality-added downstream processing but have a need to understand more about the technical aspects of steel manufacturing, properties and applications.

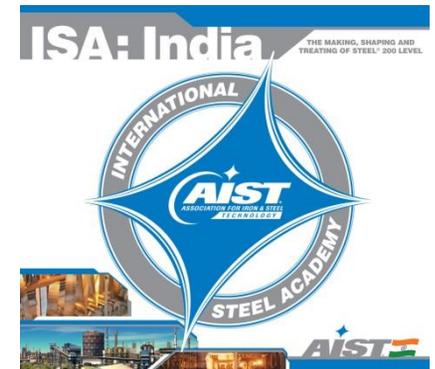
- **Making, Shaping and Treating of Steel: 201/202**

Five-day intensive course: This curriculum provides essential knowledge to those with a technical background on the fundamental elements of steelmaking (MSTS 201) and the fundamental elements of shaping and treating (MSTS 202). Instruction consists of 70% classroom training, 15% case studies and 15% facility tour.

- **Making, Shaping and Treating of Steel: 300 Series**

Three-day intensive course: These curricula provide in-depth essential knowledge to those with technical responsibilities within the steel plant. Instruction consists of 50% classroom training and 50% in-plant practice for various process routes.

- Blast Furnace Ironmaking
- Advanced High-Strength Sheet Steels
- *Other modules under development*





ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

AIST International Steel Study Tours

Ten-day curriculum: Each tour includes visits to 5-7 steel production sites and a formal technical exchange between attendees and local operators within a specific production unit, e.g., BOF, EAF. Study tours provide valuable technical insight to regional steel manufacturing solutions, and offer a unique and novel perspective for tour attendees. Study tour locations include:

- Argentina
- Brazil
- Canada
- Germany
- Japan
- Mexico
- Turkey
- Ukraine
- United States



AIST Italy Steel Forum

The objective of this forum is to provide region-specific technical and economic curriculum focused on steel manufacturing. Specific topics of interest to the Italian market are discussed, with an emphasis to compare and contrast North American and European perspectives.

AIST Steel Manufacturing 3-D Process Simulator

A general tutorial utilizing animated models developed in conjunction with the Center for Innovation, Visualization and Simulation at Purdue University Calumet to demonstrate the various process operations for making steel. *Under Development*



ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

AIST Leadership Conference

The objective of this annual program is to enhance industry value through participation in AIST activities, and to help individuals become more knowledgeable leaders for the steel industry. Strategic initiatives such as globalization, training, communication and recruiting challenges are addressed. Training for personal leadership skill development is provided with varying topics such as conflict management and finding opportunities during crisis.

Emerging Leaders Alliance (ELA)

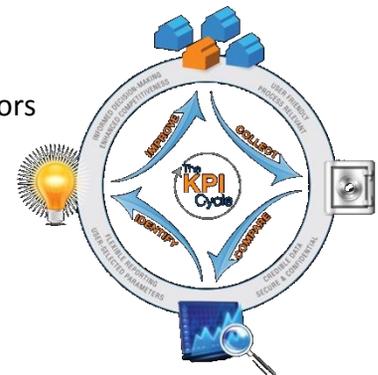
AIST leads this partnership of 11 major engineering, research and science-based organizations that provides high quality, cost-effective leadership training across multiple industries. The curriculum is oriented towards mid-level management with future leadership potential. The ELA offers unique insight to leadership solutions from outside the steel industry.

www.emergingleadersalliance.org



AIST Process Benchmarker® (APB®)

This subscriber service provides a secure online benchmarking platform for tracking key performance indicators (KPIs) between manufacturers of iron, steel and related raw materials. APB enables comparative technical benchmarking within 11 major process modules, e.g., BF, BOF, EAF, CC, etc., offering detailed insight for best-of-class performance. The program objective is to advance sustainable steel manufacturing through continuous improvement. www.aist.org/resources/apb





ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

29 Technology Committees

AIST has 29 specialized committees organized into nine divisions representing the essential technologies required for sustainable steel manufacturing. www.aist.org/technology-committees/find-a-committee

I

Safety & Environment

- Safety & Health
- Environmental

II

Cokemaking & Ironmaking

- Cokemaking
- Ironmaking

III

Steelmaking

- Electric Steelmaking
- Oxygen Steelmaking
- Specialty Alloy & Foundry

IV

Refining & Casting

- Ladle & Secondary Refining
- Continuous Casting

V

Rolling & Processing

- Hot Sheet Rolling
- Cold Sheet Rolling
- Galvanizing
- Tinplate Mill Products
- Plate Rolling
- Rod & Bar Rolling
- Pipe & Tube
- Rolls

VI

Metallurgy

- Metallurgy — Steelmaking & Casting
- Metallurgy — Processing, Products & Applications

VII

Energy & Control

- Energy & Utilities
- Electrical Applications
- Computer Applications

VIII

Plant Services & Reliability

- Project & Construction Management
- Maintenance & Reliability
- Lubrication & Hydraulics
- Refractory Systems

IX

Material Movement & Transportation

- Material Handling
- Cranes
- Transportation & Logistics

22 Member Chapters in 8 Countries

Professionals in the iron and steel industry and academia from **more than 70 countries** gather in **22 regions** to strengthen AIST’s global network. Through active networking at the chapter level, AIST members benefit from the interchange of ideas and solutions. www.aist.org/local-member-chapters



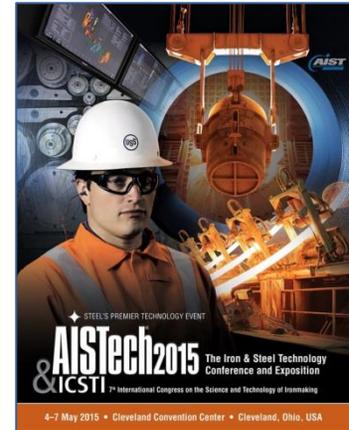


ADVANCING THE TECHNICAL DEVELOPMENT, PRODUCTION, PROCESSING AND APPLICATION OF IRON AND STEEL

Major Technical Forums

AISTech – The Iron and Steel Technology Conference and Exposition

Steel’s premier technology event features a world-class conference with more than 500 technical presentations, as well as plant tours and keynote presentations by today’s business leaders. The program also showcases the world’s largest annual steel exposition representing all phases of steel manufacturing technology. AISTech attracts 7,000+ attendees each year. www.aistech.org



Material Science & Technology Conference and Exhibition (MS&T)

This multi-material forum includes specific steel-related symposia that explore the latest generation of steel grades, properties and applications. MS&T attracts 3,500+ attendees each year, including 900+ engineering students. www.matscitech.org

AIST CONAC

Steel’s premier technology congress for Mexico features 100 technical presentations and a large-scale exposition. CONAC – Congress Nacional de Acero – attracts 1,000+ attendees and is held biennially. www.aist.org/local-member-chapters/find-a-chapter/mexico

Galvatech and CHS²

The 10th International Conference on Zinc and Zinc Alloy coated Steel Sheet (Galvatech) will be held in Toronto, Ont., Canada. Galvatech 2015 will be co-located with the 5th International Conference on Hot Sheet Metal Forming of High-Performance Steel (CHS²) www.aist.org/conference-expositions/galvatech-2015

AIST Membership Trend

