



Upcoming Events

Long Products Rolling – A Practical Training Seminar

25–28 February 2019
Homewood Suites by Hilton Charleston Historic District
Charleston, S.C., USA

The Making, Shaping and Treating of Steel: 101

26–27 February 2019
DoubleTree by Hilton Memphis Downtown
Memphis, Tenn., USA

Sheet Processing and Finishing Lines – A Practical Training Seminar

17–21 March 2019
The Battle House Renaissance Mobile Hotel
Mobile, Ala., USA

Specialty Alloy and Foundry – A Practical Training Seminar

18–21 March 2019
The Hilton Harrisburg
Harrisburg, Pa., USA

Plant tour:
Nucor Steel–
Berkeley or
Showa Denko
Carbon Inc.

25th Annual Modern Electric Furnace Steelmaking

A Practical Training Seminar

4–8 February 2019
Francis Marion Hotel
Charleston, S.C., USA



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TECHNOLOGY
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About the Program

Celebrating its **25th year**, this course covers safety, the basics of electrical and mechanical features of electric arc furnaces, refractories, and the role of raw materials. The program will explore the fundamentals of electric furnace steelmaking technology, the use of energy inputs, the steelmaking process, electrodes and environmental concerns for electric steelmaking. Attendees will also have the opportunity to learn how their operation compares to industry benchmarks, and to hear about the latest developing technologies. The midpoint of the conference includes a plant tour followed by an expert roundtable and reception with an open forum to discuss questions and challenges.

Who Should Attend

Electric steelmaking attendees who wish to gain a fundamental understanding of the electrical, thermomechanical and technical aspects of modern electric furnace steelmaking. EAF furnace operators, maintenance personnel, upstream/downstream personnel, metallurgists and suppliers would benefit from this comprehensive seminar. Specialty steelmaking attendees include meltshop employees, foundry workers, process engineers, new employees and suppliers.

Organized By

AIST's Electric Steelmaking Technology Committee.



**BRING YOUR OWN
YOUNG PROFESSIONAL**

Visit AIST.org/byoypp for more information

Registration Includes

Welcome reception Monday, breakfasts Tuesday–Friday, lunches Tuesday–Thursday, continuous breaks, reception Wednesday, plant tour with bus transportation, and a course workbook or flash drive including presentations.

Hotel Accommodations

A block of rooms has been reserved at the Francis Marion Hotel. Please call the hotel at +1.843.722.0600 or +1.877.756.2121 by 11 January 2019 to secure the AIST discount rate of US\$149 per night for single/double occupancy.

AIST Members

US\$1,195

by 20 December 2018

US\$1,295

after 20 December 2018

AIST Non-Members

US\$1,410

by 20 December 2018

US\$1,510

after 20 December 2018



Featured Plant Tours:

Nucor Steel–Berkeley or Showa Denko Carbon Inc.

AIST.org

Schedule of Events



Monday, 4 February 2019

4–6 p.m.
Registration

5–6 p.m.
Welcome Reception

Tuesday, 5 February 2019

7 a.m.
Registration and Breakfast

8 a.m.
Keynote Speaker

8:30 a.m.
Safety Presentation – The Day We Will Remember
Ricky Rollins, Ricky Rollins Safety Speeches LLC
This is a safety presentation that will reinforce what is important to us. The day of our career that we, our co-workers, our families and friends remember will have nothing to do with the number of tons that we make on any given day. Safety as it was, where we are today and projections on the future of safety.

9 a.m.
Break

9:15 a.m.
Chemistry of EAF Steelmaking
Larry Heaslip, Interflow Techserv Inc.
The fundamentals of EAF steelmaking chemistry are presented in a way that will be informative to attendees having little background knowledge as well to those who are completely new to the topic.

10:30 a.m.
Break

10:45 a.m.
Chemistry of EAF Steelmaking (cont'd)
Larry Heaslip, Interflow Techserv Inc.

Noon
Lunch

1 p.m.
Chemistry of EAF Steelmaking (cont'd)
Larry Heaslip, Interflow Techserv Inc.

2:15 p.m.
Break

2:30 p.m.
Chemistry of EAF Steelmaking (cont'd)
Larry Heaslip, Interflow Techserv Inc.

3:30 p.m.
Break

3:45 p.m.
Chemical and Electrical Energy Inputs and EAF Performance
Sam Matson, Commercial Metals Company
The presentation will cover the timing and relationship between the electrical energy input and chemical energy input. Tracking energy inputs and losses will be discussed, as well as their relationships to the timing and magnitudes of the energy inputs.

Wednesday, 6 February 2019

7 a.m.
Breakfast

8 a.m.
Part I: EAF Designs and Operations
Jeremy Jones, CIX Inc.
Part I will focus on conventional EAF technologies and historical EAF designs.

9 a.m.
Break

9:10 a.m.
Part II: EAF Technologies – The Path to EAF Optimization
Jeremy Jones, CIX Inc.
Part II will focus on more recent EAF designs and will outline a structured approach to EAF optimization.

10:20 a.m.
Break

10:30 a.m.
EAF Operations
Mark Trapp, CIX Inc.

Noon
Lunch

12:30 p.m.
Plant Tour of Nucor Steel–Berkeley or Showa Denko Carbon Inc.

4:30 p.m.
Reception and Roundtable Discussion
Moderator: Sam Matson, Commercial Metals Company
Panelists: Harriet Dutka, SANGRAF International; Jeremy Jones, CIX Inc.; Eugene Pretorius, Nucor Corp.; and Stephan Ferenczy, Steel Dynamics Inc. – Structural and Rail Division

Thursday, 7 February 2019

7 a.m.
Breakfast

8 a.m.
Importance of Scrap Residual Controls
Dennis Rodal, ELG Haniel Metals Corp.
Scrap is the key raw material in EAF steelmaking, and controlling residuals is essential to making quality steel.

9 a.m.
Break

9:15 a.m.
Ladle Metallurgy Furnace – LMF
Helmut Oltmann, Nucor Steel–Berkeley

10:15 a.m.
Break

10:30 a.m.
EAF Maintenance Requirements
Stephan Ferenczy, Steel Dynamics Inc. – Structural and Rail Division
Typical electrical, mechanical and water-cooled equipment maintenance requirements will be discussed. Root-cause failure analysis techniques and practical solutions will be presented.

Noon
Lunch

1 p.m.
EAF Industry Perspective – Past and Future
Raymond Monroe, Steel Founders' Society of America

2:15 p.m.
Break

2:30 p.m.
Environmental Operations for the EAF
Sam Matson, Commercial Metals Company
This presentation will review the main gaseous emissions, which part of the steelmaking process is likely to generate them and potential ideas for how to reduce them. Also included will be an overview of air pollution control equipment operation.

3:45 p.m.
Break

4 p.m.
Alternative Irons
Zane Voss, CIX Inc.

Friday, 8 February 2019

7 a.m.
Breakfast

8 a.m.
The Basics of Arc Furnace Regulation System
Reinzi Santiago, Tenova Core
Electric arc furnaces make use of electrical energy to melt steel. Understanding the concept of arc regulation system and the functionality of each major component will benefit the users to find ways to maximize arc furnace electrical efficiency, to improve arc stability and to reduce heat time while operating in the same power level.

9:15 a.m.
Break

9:30 a.m.
Gas/Carbon Injection Systems
Mike Grant, Air Liquide Global Management Services GmbH
This lecture will contain a practical (with some theory) description and strategy of the use of oxygen and gaseous fuels in the EAF. The importance and strategy of use of carbon injection will also be presented. A strong emphasis on the safe use of oxygen will be made.

11 a.m.
Graphite Electrode Manufacture and Use
Theodore Kurela, GrafTech International

Noon
Conference Adjourn