

UPCOMING EVENTS

27th Crane Symposium

15-17 August 2021
Omni William Penn Hotel
Pittsburgh, Pa., USA

Electrical Engineering Basics

12-15 September 2021
The Battle House Renaissance Mobile Hotel & Spa
Mobile, Ala., USA

Cold Rolling Fundamentals – A Practical Training Seminar

12-16 September 2021
The Battle House Renaissance Mobile Hotel & Spa
Mobile, Ala., USA

Maintenance Solutions: Fundamentals and New Frontiers

21-23 September 2021
Embassy Suites San Antonio Riverwalk
San Antonio, Texas, USA

Specialty Alloy and Foundry – A Practical Training Seminar

21-23 September 2021
Sheraton Columbus Hotel at Capitol Square
Columbus, Ohio, USA



CONTINUOUS CASTING

A PRACTICAL TRAINING SEMINAR

19-21 OCTOBER 2021

DoubleTree by Hilton Perimeter Park
Birmingham, Ala., USA
Plant Tour: U. S. Steel - Fairfield Works or
Nucor Steel Tuscaloosa Inc.



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ABOUT THE PROGRAM

Developed and presented with the talented resources of the Continuous Casting Technology Committee, this informative program targets the heart of steelmaking: the frontline operator. The key focus of the program is to discuss the practical aspects of casting slabs, billets and blooms, while introducing the theoretical concepts. By achieving the proper teaching balance, attendee understanding of the process is ensured without the need for a technical background. This course is a must for the progressive, informed and educated steelmaker of the future!

WHO SHOULD ATTEND

This training seminar has been designed for the frontline casting employee. It would also be beneficial to individuals newly assigned to work in the casting area, suppliers of casting consumables and services, as well as others wishing to review major variables that impact the quality of as-cast products. The presentations will be geared toward general casting principles, with all machine types represented.

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 13.5 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credits in New York, Florida, North Carolina and Oklahoma.

ORGANIZED BY

AIST's Continuous Casting Technology Committee.



**BRING YOUR OWN
YOUNG PROFESSIONAL**

Visit AIST.org/byoyp for more information.

REGISTRATION INCLUDES

Breakfast and lunch Tuesday and Wednesday, reception Wednesday, breakfast Thursday, plant tour with bus transportation, and a course workbook or flash drive including presentations.

AIST MEMBERS

US\$845

by 7 September 2021

US\$945

after 7 September 2021

NON-MEMBERS

US\$1,090

by 7 September 2021

US\$1,190

after 7 September 2021

HOTEL ACCOMMODATIONS

A block of rooms has been reserved at the DoubleTree by Hilton Perimeter Park. Please call the hotel at +1.205.967.2700 by 4 October 2021 to secure the AIST discount rate of US\$127 per night for single/double occupancy.

ATTENTION NON-MEMBERS

Non-member registration fees include membership in AIST through 31 December 2022. Membership is not automatic. A completed membership application must be returned to AIST.



FEATURED PLANT TOUR

U. S. Steel – Fairfield Works or Nucor Steel Tuscaloosa Inc.

AIST.ORG

SCHEDULE OF EVENTS



Monday, 18 October 2021

4–6 p.m.
Registration

Tuesday, 19 October 2021

7 a.m.
Registration and Breakfast

8 a.m.
Historical Perspective of Continuous Casting With Design and Technology of Slab and Long Products

Dewey Humes, Primetals Technologies USA LLC

An overview of the evolution of the continuous casting process and technology from its introduction to the current status.

9:15 a.m.
Break

9:30 a.m.
EMS and EMBR Technology for Billets, Blooms and Slabs

Nils Jacobson and Iman Lashgari, ABB Inc.

10 a.m.
Break

10:15 a.m.
Principles of Mold Flux Technology – An Operator's Guide to Continuous Casting Flux

Marc McClymonds, Calderys HTS USA

This presentation will provide an overview of the functions of mold flux, and the key physical properties that effect casting performance and steel quality. A description of the selection criteria used to determine optimal fluxes based on casting conditions, steel grades and quality requirements will be included, along with a review of recommended application practices to ensure proper flux performance.

11 a.m.
Initial Solidification and Oscillation Mark Formation

Ron O'Malley, Missouri University of Science and Technology

Noon
Lunch

1 p.m.
Sources of Reoxidation and Why to Avoid

Ron O'Malley, Missouri University of Science and Technology

To produce high-quality cast products, steel must be protected from reoxidation. Reoxidation can occur in the ladle, at secondary ladle metallurgy operation, and also in the transfer operations from ladle to tundish and tundish to the mold. Various techniques will be described that can be used to minimize reoxidation.

2 p.m.
Break

2:15 p.m.
Caster Breakouts and Breakout Prevention

Bill Emling, SMS group Inc.

This presentation is based on the chapter in *The Making, Shaping and Treating of Steels, Casting Volume*. A review will be given of various causes for caster breakouts and the systems used to alarm and prevent breakouts.

3:15 p.m.
Break

3:30 p.m.
Caster Quality Defects and Their Potential Causes

Ron O'Malley, Missouri University of Science and Technology

The surface and internal quality of continuously cast slabs and billets is intimately linked to the caster design and to the operating and maintenance practices employed in the continuous casting process. Common causes for five classes of continuous casting defects (longitudinal cracking, transverse cracking, slivers and lamination defects, internal cracking, and segregation defects) will be reviewed and linked to these design and practice influences.

5 p.m.
Adjourn

Wednesday, 20 October 2021

7 a.m.
Breakfast

8 a.m.
Mold Copper Alloys, Design and Influence of Operating Factors on Performance

Ian Bakshi, KME America Inc.

Information as to the requirements that molds must fulfill when used on a steel continuous casting machine, the copper alloys commonly used, details of their design, various operating factors that affect mold life, and typical mold problems will be presented.

9 a.m.
Break

9:15 a.m.
Mold and Copper Maintenance and Coating Technologies

Chad Donovan, SMS group Inc.

Discussion will focus on mold and copper types and specific use of caster mold coatings.

10:15 a.m.
Break

10:30 a.m.
Caster Roll Maintenance and Overlay Technologies

Jeff Brower, Primetals Technologies USA LLC

Caster roll and segment life can be significantly increased through the use of customized weld overlays and base materials. This session details the operational impact on caster rolls and technologies developed to improve roll performance.

11:30 a.m.
Lunch

12:30 p.m.
Plant Tour of U. S. Steel – Fairfield Works or Nucor Steel Tuscaloosa Inc. 📍

4–6 p.m.
Panel Discussion and Reception

Moderator: Jeff Brower, Primetals Technologies USA LLC

Panelists: Ian Deeks, Nucor Steel–Arkansas; Ron O'Malley, Missouri University of Science and Technology; and Bill Schlichting, United States Steel Corporation

Thursday, 21 October 2021

7 a.m.
Breakfast

8 a.m.
Billet and Bloom Caster Operations and Maintenance

Ian Deeks, Nucor Steel–Arkansas, and Bill Schlichting, United States Steel Corporation

A review of the lessons learned in billet and bloom casting from a safety and operational viewpoint.

9 a.m.
Break

9:15 a.m.
Caster Hydraulics – Failure Modes and Preventive Maintenance

Mark Cook, Yates Industries Inc.

This discussion will cover cylinders used in casters, failure modes, preventive maintenance and effective cylinder reconditioning programs.

10 a.m.
Break

10:15 a.m.
Caster Secondary Cooling and Water Treatment

John Cioffi, NALCO Water, An Ecolab Company, and Stephen Swoope, Delavan Spray Technologies

Overview of spray nozzles used in the casting processes with detailed technical support on selection and maintenance of products used for cooling steel. Using fluid dynamics and heat dispersion will ensure a quality product with the highest productivity. This presentation will offer basic nozzle types and function. It will also include a look at primary and secondary cooling water leading indicators and best practices for implementation of a successful treatment program.

11:15 a.m.
Caster Bearings – Types or Bearings, Failure Modes and Preventive Maintenance

Paul Brda, NSK Corp.

This presentation will cover the different types of bearings used throughout a casting machine, proper maintenance to maximize bearing life and common failure modes.

Noon
Conference Adjourn