

UPCOMING EVENTS

Secondary Steelmaking Refractories –
A Practical Training Seminar
6–7 October 2020
Virtual Meeting

The Making, Shaping and Treating of Steel: 101
4–5 November 2020
Virtual Meeting

Modern Electric Furnace Steelmaking –
A Practical Training Seminar
1–5 February 2021
Nashville Marriott at Vanderbilt University
Nashville, Tenn., USA


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ENVIRONMENTAL SOLUTIONS: MEETING EPA AIR EMISSION REQUIREMENTS

19-20 OCTOBER 2020
Virtual Meeting

ABOUT THE PROGRAM

Meeting air emissions requirements in the steel industry is a challenging endeavor. Global changes in the steel market and evolving U.S. Environmental Protection Agency regulations have made strategic planning, compliance, monitoring and operations more complex than ever. This conference will focus on technologies, equipment and strategies to help attendees navigate the all-encompassing demands of air emissions capture systems. Case studies highlighted will offer solutions and best practices for increased efficiency at all stages of air pollution control equipment life, including design, operation, maintenance, troubleshooting and upgrades/retrofits. Effective strategies for compliance, data monitoring, reporting and permitting will also be discussed. Equipping attendees with new tools to better evaluate the effectiveness of their systems will be a primary goal of the course.

WHO SHOULD ATTEND

This course is aimed at engineers; environmental managers; health, safety and environment personnel; strategic planners; and operations/maintenance personnel.

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 15 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for this course. This course is not approved for PDH credit in New York, Florida, North Carolina and Oklahoma.

ORGANIZED BY

AIST's Environmental Technology Committee.

REGISTRATION INCLUDES

Live virtual instruction via individual link; electronic access to course material; networking opportunities; and live Q&A with instructors

AIST MEMBERS
US\$295

NON-MEMBERS
US\$445

ATTENTION NON-MEMBERS

Non-member registration fees include membership in AIST through 31 December 2021. Membership is not automatic. A completed membership application must be returned to AIST.



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SCHEDULE OF EVENTS



Monday, 19 October 2020

8 a.m.
Introductions

8:15 a.m.
Overview of Control Techniques: What Is Used and Why
Ray Tedford, Schust

9 a.m.
Using Computational Fluid Dynamics to Determine Capture Efficiency
Brian Bakowski, SLR Consulting
Computational fluid dynamic (CFD) modeling is the process in which a three-dimensional computer model is created to study airflow, temperature, pressure and other phenomena within a closed system. Over the last several years, CFD software and computing hardware has advanced to the point where engineers can simulate real-world conditions within a virtual world. In the case with steel mills, this virtual world is created and engineers can simulate most aspects of their operations, beginning with coke batteries through the cooling of the final product. Additionally, "what if" scenarios can be created and modeled with results compared to develop a cost benefit analysis. This presentation will focus on using CFD to calculate capture efficiency and will review the process of creating a CFD model and examine several case studies.

9:45 a.m.
Break

10 a.m.
Capture of Pollutants: Thermodynamics, Plume Behavior and Collection Hoods
Dejan Zrelec, Tenova Goodfellow Inc.
Science behind the fumes, emissions generation and capture will be clarified. The practical examples of various collection hood designs and performance optimization steps will be summarized and discussed.

10:45 a.m.
Filter Media and Technologies: Can Bag Selections Affect How EPA Requirements Are Met?
Larry Brown, BWF Envirotec USA

11:30 a.m.
Lunch Break

12:30 p.m.
Baghouse Design Features
Mike Allen, Parker Hannifin Corp./BHA

1:15 p.m.
Environmental Concept of Badische Group
Jim Belous, Bender Corp.

This paper will describe how a properly designed environmental concept helped a modern, high-production steel plant to operate within the strict emission limits of the European Union surrounded by vineyards along river Rhine. The combination of proactive approach and close connection with the local community and local government produces a good recipe for successful coexistence.

2 p.m.
Break

2:15 p.m.
Keys to Effective Evaporative Cooling
Gordon Janes, JAGO Environmental Technologies
Water sprays are often used for gas quenching in ductwork and quench vessels to protect steelwork or downstream air pollution control (APC) equipment, as an integral part of environmental solutions for dioxin and furan control or for enhancing APC equipment performance. This presentation will provide the keys to a successful installation: heat and mass balance calculations, drop size calculations, good nozzle design with understood characteristics and drop size control, understanding of the gas flow upstream and throughout the spray zone, and finally the correct design of the pumping and control system.

3 p.m.
Wrap Up and Adjourn

Tuesday, 20 October 2020

8 a.m.
Introduction

8:15 a.m.
Heat Transfer, Control and the Impact on System Design and Operation
William Allan, Ramboll Canada Inc.

9 a.m.
Fan Fundamentals
Vern Martin, Flowcare Engineering

9:45 a.m.
Break

10 a.m.
Fan Mechanics
Sean Graham, New York Blower Company

10:45 a.m.
The Nuts and Bolts of Stack Emissions Testing for the Iron and Steel Industry
Darryl Christy, Grace Consulting Inc.
There is a good amount of pre-planning that a facility (production, engineering and maintenance) needs to do when preparing for a stack test program, whether it's for permit compliance or engineering purposes. This presentation will lay out the common pitfalls and issues involved with stack testing so a facility can address them in advance and ensure as smooth of a test as possible.

11:30 a.m.
Lunch Break

12:30 p.m.
Emissions Monitoring Systems for the Steel Industry
Tim Kuiken, M&C TechGroup NorthAmerica Inc.

1:15 p.m.
Packed Bed Wet Scrubber Operation and Maintenance
Adam Pace, Monroe Environmental Corp.
Packed bed wet scrubbers are common air pollution control devices utilized to control toxic gas emissions from a variety of metal production and treatment processes. However, because they are not typically a part of the larger air pollution control trains that exhaust the steelmaking processes (which often utilize venturi scrubbers, baghouses, etc.), their operation and maintenance is less understood by plant engineers, operators and maintenance personnel. This presentation will clarify the design, operation and maintenance of packed bed wet scrubbers and allow operators to better assess and optimize their existing scrubbers.

2 p.m.
Break

2:15 p.m.
Emissions and Control of Fugitive Dust From Unpaved Roadways
Bryce Uytiepo, Suez Water Technologies
Several operations in the iron and steel industry have the potential to generate unwanted air emissions. Most of these sources can employ containment or collection methods to address emissions. Unpaved roadways present unique challenges to engineers and operators working toward air emission compliance. The presentation reviews how road dust is generated and what options are available to control it. The most common suppressants used in palliative strategies are compared. Steps required for designing a site-specific fugitive dust mitigation program are detailed.

3 p.m.
Wrap-Up and Conference Adjourn