DIGITALIZATION APPLICATIONS FUNDAMENTALS

TECHNOLOGY TRAINING SEMINAR

12–13 OCTOBER 2021
Renaissance Cleveland Hotel • Cleveland, Ohio, USA

UPCOMING EVENTS

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

Secondary Steelmaking Refractories – A Practical Training Seminar
5–7 October 2021
The DoubleTree Colorado Springs
Colorado Springs, Colo., USA

Environmental Solutions: Water Management
9–11 November 2021
Omni Corpus Christi Hotel
Corpus Christi, Texas, USA

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ABOUT THE PROGRAM

Digital transformation is a critical component for steel companies' future success to ensure enhanced productivity with optimal quality, safety and profitability. Digitalization comprises the technologies that enable digital transformation. These technologies can be applied to almost all aspects of the steel business, including production, maintenance, quality, safety, scheduling, purchasing, sales, etc. The AIST Digitalization Applications Fundamentals training course covers the history, technology and example applications of each of these technologies. The two-day program will enlighten attendees on how they can apply these technologies to improve their business/operation. Technology leaders from across the steel industry will share their knowledge and experience on how digitalization can transform the industry.

WHO SHOULD ATTEND

This course is intended for all key problem-solvers in the steel industry who aspire to expand their toolbox for solving complex problems. This includes entry- to senior-level engineers and leaders who would benefit from understanding how digitalization technology solutions can improve their business/process.

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.

BRING YOUR OWN YOUNG PROFESSIONAL
Visit AIST.org/byoyp for more information.

REGISTRATION INCLUDES

Breakfast and lunch Tuesday and Wednesday, reception and a course workbook or flash drive including presentations.

HOTEL ACCOMMODATIONS

A block of rooms has been reserved at the Renaissance Cleveland Hotel. Please call the hotel at +1.800.468.3571 by 20 September 2021 to secure the AIST discount rate of US$139 per night for single/double occupancy.

AIST MEMBERS	
US$845	US$ 1,090
by 31 August 2021	after 31 August 2021

NON-MEMBERS	
US$945	US$1,190
by 31 August 2021	after 31 August 2021

PROFESSIONAL DEVELOPMENT HOURS

This course may qualify for up to 14 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 Digitalization Applications Technology Committee and Digital Transformation Subcommittee.

SCHEDULE OF EVENTS

Tuesday, 12 October 2021

7 a.m
Registration and Breakfast

8 a.m.
Opening Remarks

8:15 a.m.
Keynote Presentation: Industrial Digitalization Technologies: An Integrative Overview
Gary Fedder, Carnegie Mellon University
This kickoff presentation will provide an overview of the various digitalization technologies for manufacturing and how these technologies integrate and interact synergistically. Topics include artificial intelligence, machine learning, big data, edge and cloud computing, Industrial Internet of Things, multi-physics hierarchical simulation, digital twin, additive manufacturing, augmented and virtual reality, and industrial cybersecurity. Select research and development examples illustrate applicability to manufacturing from its present to future state.

9:15 a.m.
What Is Digitalization/Industry 4.0?
Derrick Willingham, CMC Associates

10:15 a.m.
Break

10:45 a.m.
Digitalization – Why Now?
James Hendrickson, ArcelorMittal USA
Most of the technologies that comprise digitalization are not new. In fact, some such as artificial intelligence and autonomous robotics have been around for many decades. So, the question is why are companies now embracing and investing in digitalization technologies?

11:30 a.m.
Industrial Internet of Things
Franck Adjogble, SMS group Inc.
The Industrial Internet of Things (IIoT) describes the use of the Internet of Things (IoT) in multiple industries, such as manufacturing (Industry 4.0), logistics, transportation, energy, mining and metals, and other industrial sectors. The Industrial Internet of Things covers, the same way as the Internet of Things, many use cases and applications. The IIoT focuses on optimizing operational efficiency and maintenance, and plays an important role in the integration of information technology (IT) and operational technology (OT). It provides many opportunities for automation optimization, smart manufacturing and asset performance management. IIoT is a new way to provide services to customers and the establishment of a new revenue with an on-demand service model.

Noon
Lunch

1 p.m.
Simulation Technology and Analysis
Perry Zalevsky, OSIsoft, LLC

1:45 p.m.
System Integration – Foundation for Digital Transformation
Reginald Snyder, TMEIC
A study of the past and present system architectures, new concepts, and new tools to facilitate data accumulation, dissemination, and analysis.

2:15 p.m.
Break

2:45 p.m.
Machine Learning and Steel
Alp Kucukelbir, Fero Labs
Machine learning (ML) has myriad applications in steel. This review begins with an introduction that situates ML with other forms of mathematical modeling. After establishing the basic principles of ML, modern use cases of ML within the steel sector are studied.

3:30 p.m.
Machine Learning/Vision
Luc Van Nerom, PSI Metals Belgium

4:15 p.m.
Big Data in the Metals Industry
Michael Peintinger, QuinLogic SMS group Inc.
This presentation will look at big data in the metals industry, what it is and how it is useful.

5 p.m.
Reception

Wednesday, 13 October 2021

7 a.m.
Breakfast

8 a.m.
Keynote Presentation
James Hendrickson, ArcelorMittal USA

8:30 a.m.
Big Data Analysis
Edgardo La Bruna, Janus Automation LLC
Use of state-of-the-art artificial intelligence technologies to improve the data analysis in the steel industry. Description of key aspects of phased implementation for successful digital transformation and data analysis systems.

9:15 a.m.
Break

10:45 a.m.
Edge Computing
David Kober, iba America LLC

11:30 a.m.
Lunch

12:30 p.m.
Cloud Computing
Patrick Gallagher, Management Science Associates Inc.
Cloud computing is one of the key pillars of digital transformation. This session defines cloud computing, reviews the history and technologies used, and provides example applications used in the metals industry.

1:15 p.m.
Additive Manufacturing
Daniel Pesta, EBNER Furnaces Inc.
This presentation will familiarize the participant with the fundamentals of additive manufacturing. No prior experience or education in this field is assumed. Special emphasis will be given to the technologies' application in metallurgy and metal manufacturing.

2 p.m.
Break

2:30 p.m.
Introduction and Application of Augmented Reality Technology for Steel Plants
Eric Almquist, Star Tool & Die Works Inc.
Augmented reality (AR) is a technology of combining reality with digital content that will become the standard method of interacting with digital devices over the coming decade and has already proven its potential in steel plants. This practical presentation will provide an introduction to AR technology, its strengths, its weaknesses and how AR has begun to revolutionize frontline workers' jobs with information technology in steel plants.

3:15 p.m.
Building Defense-in-Depth OT Cybersecurity for the Iron and Steel Industry
Nate Smith, GrayMatter
Iron and steel producers must consistently evaluate the risks and resiliency inherent in their operational technology (OT) cybersecurity strategies. This presentation will review how organizations can assess their ability to identify, protect, detect, respond and recover from a cybersecurity event. The session will also highlight what tools and solutions are available to establish a defense-in-depth approach to protecting valuable, production-floor equipment, assets and other connected devices from threats, including ransomware, malware, supply chain attacks and other threats that have impacted iron and steel organizations.

4 p.m.
Applications and Benefits of Digitalization: ASRS, W/MS, YMS, Man-Less Robotic Operations and Industry 4 for On-Line Operation
Jagannathan Rajagopalan, Pesmel South Asia

4:30 pm.
Workshop and Roundtable

5 p.m.
Conference Adjourn