

ADVANCE BROCHURE

September 28 - October 1, 2025
Greater Columbus Convention Center &
Hyatt Regency Columbus
Columbus, OH

Technical Meeting and Exhibition
MS&T25
MATERIALS SCIENCE & TECHNOLOGY



WHERE MATERIALS INNOVATION HAPPENS

FEATURING

TMS FALL MEETING
@ MATERIALS SCIENCE & TECHNOLOGY

AIST / STEEL PROPERTIES
ASSOCIATION FOR IRON & STEEL & APPLICATIONS
TECHNOLOGY

The American
Ceramic
Society
ceramics.org

Annual Meeting

CO-LOCATED

THE
**Advanced
Materials**
SHOW USA

matscitech.org/MST25

PLENARY SESSIONS



DENGQI BAI

Principal Research Engineer
SSAB Americas



TAYLOR D. SPARKS

Professor of Materials Science & Engineering, University of Utah

AIST Adolf Martens Memorial Steel Lecture

Microstructure Engineering for Advanced High-Strength Line Pipe Steels

September 29, 2025
8 – 9 a.m.

Line pipe steels are mostly used for oil and natural gas transmission pipelines. Due to high pressure and remote operating conditions, the requirements for mechanical properties of these steels are stringent. High operating pressure is necessary for high transmission efficiency. This calls for steel with high strength. Meanwhile, high toughness is also required for high-performance line pipe steels. Over the last 25 years, advanced high-strength line pipe steels with strength level as high as 120 ksi (827 MPa) have been developed to meet the demand. Similar to any other steel, microstructure is the key to producing the required mechanical properties. For different strength levels, microstructural constituents could be different. However, a fine grain structure is always desirable because grain refinement is the only microstructural parameter that contributes positively to both strength and toughness. Achieving a fine grain structure and appropriate microstructure for a given steel grade requires careful consideration in designing steel chemistry and thermomechanical processing. This presentation will discuss the concept of alloy design and the strategies for thermomechanical processing to achieve desirable mechanical properties for line pipe steels.

TMS Plenary Session

Making Materials Science Go Viral!

September 29, 2025
2 – 3 p.m.

Materials science is everywhere: in the frames of our bikes, the chips in our phones, and the engines of our vehicles. But too often, the field remains invisible to the world. In a media landscape driven by streaming video, podcasts, and algorithmic discovery, how can we make sure materials science not only reaches new audiences but actually inspires them?

In this talk, I'll share what I've learned from a decade of experimenting with new ways to communicate materials science—through YouTube, the Materialism podcast, editorial innovation as Editor-in-Chief of Integrating Materials and Manufacturing Innovation, and even helping out behind the scenes on the Discovery Channel's Diesel Brothers. With close to 1000 videos, podcasts, and digital posts created and shared, I've seen what it takes to make science not just informative but engaging—something people want to watch, listen to, and share.

Whether you're a student, professor, researcher, or editor, this talk will offer practical strategies and real-world examples for how storytelling, short-form video, and scalable digital platforms can help materials science break out of the PDF and into the world.

ACerS Edward Orton Jr. Memorial Lecture

Ceramics for Structural Applications – Overcoming the Challenges of This Formidable Material

September 30, 2025
8 – 9 a.m.

Advanced ceramics have excellent heat, corrosion, erosion, and wear resistance and demonstrate superior mechanical properties under demanding conditions. However, their brittle nature and low fracture toughness have posed significant barriers to structural applications. Using silicon nitride—one of the most widely used engineering ceramics—as an example, this talk provides an overview of how ceramic engineers have attempted to overcome this obstacle over the last several decades. One of the most common and effective strategies of toughening ceramics is to deliberately introduce “weak parts” into a “hard” body and induce elastic bridging and frictional pull-out of constituent substances, e.g., elongated grains, thus optimizing the body’s fracture resistance. Much research effort has been devoted to adjusting the characteristics of grain boundaries to function as “weak” parts and tailoring microstructures, e.g., sizes, shapes, and orientations of grains, through innovative processing routes, leading to markedly improved fracture toughness and other properties.



TATSUKI OHJI

Yokohama National University,
Nagoya Institute of Technology,
and National Institute of Advanced Industrial Science and Technology (AIST), Japan



PROGRAM AT A GLANCE

Materials Science & Technology (MS&T) is where materials innovation happens! Each year, MS&T’s long-standing, recognized forum brings together scientists, engineers, students, suppliers, and business leaders to discuss current research and technical applications to shape the future of materials science and technology.

The event’s unmatched technical program fosters technical innovation at the intersection of materials science, engineering, and application—addressing structure, properties, processing, and performance across the materials community.

Join other materials science experts from three leading materials societies to discuss the latest advancements in your field.

MS&T25 FEATURES THE FOLLOWING EVENTS:



AIST STEEL PROPERTIES AND APPLICATIONS

Technical developments
related to ferrous metallurgy
and the steel manufacturing



Annual Meeting ACERS 127TH ANNUAL MEETING

Advancing the industry with
the latest research in ceramics
and glass



TMS FALL MEETING

Exploring the intersections
of development, synthesis,
and application

LECTURES & AWARDS

Monday, September 29

AIST Plenary Session

8 – 9 a.m.

The Navrotsky Award for Experimental Thermodynamics of Solids

8 – 8:55 a.m.

ACerS Bioceramics Awardees

9 – 10 a.m.

TMS Plenary Session

2 – 3 p.m.

ACerS Richard M. Fulrath Award Session

2:20 – 4:40 p.m.

Tuesday, September 30

ACerS Plenary Session

8 – 9 a.m.

TMS Frontiers of Materials Award Symposium

8 a.m. – 12 p.m. and 2 – 5 p.m.

ACerS Alfred R. Cooper Award Session

9:20 a.m. – 12 p.m.

ACerS Frontiers of Science and Society – Rustum Roy

1 – 2 p.m.

Wednesday, October 1

ACerS Basic Science Division Robert B. Sosman Lecture

1 – 2 p.m.

TMS Frontiers of Materials Award Symposium

8 – 10 a.m.

TECHNICAL PROGRAM

- + Additive Manufacturing
- + Artificial Intelligence
- + Biomaterials
- + Ceramic and Glass Materials
- + Fundamentals and Characterization
- + Iron and Steel (Ferrous Alloys)
- + Lightweight Alloys
- + Materials-Environment Interactions
- + Modeling
- + Nanomaterials
- + Nuclear Energy
- + Processing and Manufacturing
- + Sustainability, Energy, and the Environment
- + Special Topics



SPECIAL EVENTS

Visit the MS&T Special Events web page to see all special events, including dates and times.

Monday, September 29

All Conference Breakfast

7 – 8 a.m.

ACerS 127th Annual Membership Meeting

1 – 2 p.m.

PE Curious: How Licensure Shaped Our Careers Sponsored by the TMS Professional Development Committee

4:30 – 6 p.m.

ACerS Annual Honor and Awards Banquet*

6:30 – 10 p.m.

ACerS Basic Science Division Ceramographic Exhibit & Competition

Various Hours September 29 - October 1

Tuesday, September 30

Crafting Your Story: Using the CAR Framework to Communicate with Clarity and Impact*

3 – 4 p.m.

**Requires additional registration/ticket purchase.*

STUDENT ACTIVITIES

Visit the MS&T Student Activities web page to see complete description of all student events, including details for applying for Material Advantage chapter grants and individual travel grants.

- + ACerS Student Tour
- + AIST Student Plant Tour
- + AIST Steel to Students Recruiting Reception
- + Undergraduate Student Poster Contest
- + Graduate Student Poster Contest
- + Undergraduate Student Speaking Contest
- + Student Networking Mixer
- + Ceramic Mug Drop Contest
- + Ceramic Disc Golf Contest
- + Resume Coaching Workshop
- + Student Awards Ceremony
- + Chapter Officers Workshop

HOTEL INFORMATION

HOTEL RESERVATION DEADLINE: SEPTEMBER 4, 2025

For best availability and immediate confirmation, make your reservations online at matscitech.org/mst25. Rates listed below are for single or double occupancy. Reservations open June 2, 2025.

Hyatt Regency Columbus (ACerS, AIST and TMS Headquarters)*

\$225/night + tax

350 N High St.

Columbus, OH 43215

*Connected to the GCCC

Drury Inn & Suites Columbus Convention Center

\$195/night + tax

88 E Nationwide Blvd

Columbus, OH 43215

HOW TO BOOK HOTEL RESERVATIONS



Online

[CLICK HERE](#) for new reservation OR to modify or cancel an existing hotel reservation.

U.S. GOVERNMENT RATE

Rooms are extremely limited; proof of federal government employment must be shown at check-in or higher rate will be charged. U.S. Government rate is the prevailing government rate.

CREDIT CARD DEPOSIT

All reservation requests must be accompanied by a credit card guarantee for a deposit of one night's room and tax for each room reserved. Your credit card WILL NOT BE CHARGED during this initial stage and will be held as a GUARANTEE only.

ACKNOWLEDGMENTS

Experience Columbus/Passkey will send reservation acknowledgements within 24 hours via email. Please check spam/junk mail and if you do not receive your acknowledgement in this time frame, contact Experience Columbus. You will not receive a written confirmation from the hotel. PLEASE DO NOT CALL THE HOTELS TO BE SURE, THEY WILL NOT HAVE ACCESS TO THE RESERVATIONS UNTIL AFTER THE RESERVATION SITE CLOSURES.

CANCELLATIONS & CHANGES

Any reservation cancelled within 72 hours of arrival date will be charged one night's room and tax. Please refer to your reservation acknowledgement for your individual hotel cancellation policy. Through September 18, changes and cancellations can be made online or by contacting Experience Columbus via e-mail at Housing@ExperienceColumbus.com. After 5 pm, September 18, contact your hotel to make changes and/or cancellations.

QUESTIONS OR SPECIAL REQUESTS?

For questions or special requests, please contact Experience Columbus at Housing@ExperienceColumbus.com. Special requests are not guaranteed. Hotels will assign specific room types upon check-in, based on availability.

September 30 - October 1, 2025
Halls C & D, Greater Columbus Convention Center | Columbus, OH
September 30: 9:00am - 6:00pm | October 1: 9:00am - 3:00pm

THE
Advanced Materials
SHOW | USA

Technical Meeting and Exhibition
MS&T25
MATERIALS SCIENCE & TECHNOLOGY

MAKE SURE TO VISIT THE EXPO!

Meet 120+ industry-leading exhibitors showcasing the latest in advanced materials development, additive manufacturing solutions and the latest lab equipment and supply chain solutions.



Free-to-attend talks within the expo:

- **The Advanced Ceramics Stage:**
Showcasing the latest innovations in Ceramic manufacturing across diverse applications, along with manufacturing advancements that enhance efficiency and reduce costs.
- **Advanced Carbons Council Sessions:**
Interested in adoption and use of engineered advanced carbons?
- **The Advanced Materials Stage:**
Featuring discussions on manufacturing process improvements, advanced technologies, and material developments tailored to specific applications and property areas.

New for 2025... **ceramitec USA Pavilion!**

ceramitec
USA

ceramitec USA makes its debut with a dedicated pavilion as an exclusive partner.
ceramitec is the leading trade fair for the ceramics industry - bringing together producers, users, and scientists exploring a comprehensive range of machinery, equipment, processes, and raw materials.

Join Us for the **Expo Drinks Reception**

SPONSORED BY:



Tuesday September 30 - 4:30pm - 6:00pm

Brought to you by:



Find out how you can get involved in the expo, visit www.advancedmaterialsshowusa.com or email natasha.burke-krause@event-partners.com for more information.

REGISTRATION

Visit the registration page to see what your registration includes.

REGISTRATION RATES	ON OR BEFORE AUGUST 22, 2025	AFTER AUGUST 22, 2025
Member	\$825	\$975
Non-Member	\$1,025	\$1,175
Undergraduate Student Member	\$25	\$75
Undergraduate Student Non-Member	\$25	\$75
Graduate Student Member	\$200	\$250
Graduate Student Non-Member	\$225	\$275
Expo Visitor	\$0	\$0

MS&T conference registration includes access to:

- MS&T Technical Meeting
- The Advanced Materials Show (Co-located with MS&T 2025)
- Access to all MS&T technical sessions and poster session, including the MS&T Plenary Sessions and Special Lectures
- Admission to select Networking and Social Events including the MS&T Poster Session combined with The Advanced Materials Show Exhibition Reception
- Full access to the exhibit hall including The Advanced Materials Show USA
- Welcome Breakfast on Monday morning
- Lunch in the exhibit hall Tuesday (for all MS&T attendees, including students) and Wednesday (for MS&T attendees, not including students)
- Complimentary memberships in ACerS, AIST, TMS, if selected, for nonmembers only (non-member students receive one free year of Material Advantage membership)

Expo Visitor registration includes access to:

- Over 120+ exhibitors on the expo floor
- ceramitec USA Pavilion
- Free to attend talks
- Networking Reception

For more information, visit our website online
matscitech.org/MST25