



Technical Meeting and Exhibition

# MS&T24

MATERIALS SCIENCE & TECHNOLOGY

## CONFERENCE BROCHURE

October 6-9, 2024  
David L. Lawrence Convention Center  
Pittsburgh, PA

### 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-SPONSOR

**Society For Biomaterials**  
Giving life to a world of materials

CO-LOCATED

THE **Advanced Materials**  
SHOW USA

[matscitech.org/MST24](https://matscitech.org/MST24)

Technical Meeting and Exhibition  
**MS&T24**  
 MATERIALS SCIENCE & TECHNOLOGY



## 2024 Chairs and TMS Representatives

John Carpenter, Los Alamos National Laboratory  
 Eric Lass, University of Tennessee, Knoxville

## 2024 ACerS Representative

Matthew Dickerson, Air Force Research Laboratory

## 2024 AIST Representative

Mario Buchely, Missouri University of Science & Technology

## UPCOMING MS&T SCHEDULE

Columbus, Ohio  
 September 28 – October 1, 2025

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[matscitech.org/MST24](https://matscitech.org/MST24)

## PLENARY SESSIONS



### AMAR K. DE

Director of Quality and Product Development at Big River Steel, a US Steel Company

### About Amar K. De

Amar K De is currently Director of Quality and Product Development at Big River Steel, a US Steel Company. Amar is a career product metallurgist with over three and a half decades of steel product development experience. He has served the steel industry through his novel low-carbon, lean alloying principles of product development in all critical application areas, as well as through thin and thick slab casters, i.e., continuous, and discrete modes of steel production. Amar graduated in Metallurgical Engineering in 1985 from Indian Institute of Technology. He worked extensively on fundamentals of aging behavior in ultra-low carbon steels, dual-phase steels and TRIP steels and developing high strength ULC-bake hardened steels at University of Ghent. He joined Metallurgical Engineering department in Colorado School of Mines as a Research faculty before joining ArcelorMittal Global R&D in East Chicago in 2005 where he concentrated on plate product development metallurgist. He got extensive hands-on expertise in the thermomechanical processing of steels for the oil and gas industry, as well as a thorough understanding of steel processing technology for important sour service applications. He is likely the first to introduce high toughness pressure vessel steel manufacture utilizing a low-carbon lean alloy technique particularly.

### AIST Adolf Martens Memorial Steel Lecture

*Thin-Slab Continuous Strip Processing Technology – Changing the Landscape of How We Make Greener and Leaner Advanced High-Strength Steels*

**Monday, October 7th**  
**8:00 – 9:00 a.m.**

Thin-slab continuous strip processing technology has evolved quite rapidly over the last decade in how we can take advantage of its fast operational dynamics in making advanced steel grades that were difficult to make through discrete thick slab casting processing route. The integration of electric arc furnace steelmaking with most advanced steel refining technologies is making it possible to innovate and produce steel products that are significantly leaner and greener, and even eliminate the need for intermediate processing installations. Fundamentals of product development principles are also being revisited in light of fast reaction dynamics in solidification, slab heat retention and hot rolling processes. Many new frontiers of high-strength products for structural as well as automotive applications have been developed which can reshape the need for the conventional product mix. This presentation will discuss fundamentals of chemistry and process design for developing a nanoprecipitate-strengthened high-strength, single-phase, lean steel which has proven outstanding for some critical component applications.

## PLENARY SESSIONS



### **JULIE M. SCHOENUNG**

Professor and Wofford Cain Chair III,  
Departments of Materials Science  
and Engineering and Mechanical  
Engineering Texas A&M University

### **TMS/ASM Distinguished Lectureship in Materials and Society**

*Saving the Planet through Sustainability-Informed  
Selection, Design and Discovery of Materials*

**Monday, October 7th  
2:00 – 3:00 p.m.**

In today's world, when we think about saving the planet, we are likely thinking about reducing 'carbon footprint' and the negative effects of climate change. While these are important goals, within the field of materials science and engineering, we need to also think about what I will refer to here as the 'chemical footprint'. This chemical footprint arises from the consumption of goods, which require the production of materials, which requires the use of resources such as minerals, energy, and water, and can lead to emissions of toxic substances into the air, water, and soil. Consequences of this chemical footprint include increased exposure to humans, leading to cancer and other diseases, and increased damage to our environment. As experts in materials science and engineering, it is imperative that we not only strive for enhanced materials performance, thereby enabling technological development, but also endeavor to purposefully reduce the negative consequences of materials selection, design, and discovery. This multi-attribute objective function requires that we simultaneously address performance, economics, chemical safety (toxicity), energy demand, and materials circularity (waste). A rapidly evolving suite of decision tools and databases, including the strategic application of artificial intelligence and machine learning, can facilitate these essential sustainability-informed decisions.

### **About Julie M. Schoenung**

Julie M. Schoenung currently holds the title of Professor and Wofford Cain Chair III, in the Departments of Materials Science and Engineering and Mechanical Engineering at Texas A&M University. She is a member of the National Academy of Engineering (NAE), and a Fellow of the American Association for the Advancement of Science (AAAS), the National Academy of Inventors (NAI), the Minerals, Metals and Materials Society (TMS), the Materials Research Society (MRS), ASM International, the American Ceramic Society, and the Alpha Sigma Mu Honor Society. She received her Ph.D. and M.S. in materials engineering from the Massachusetts Institute of Technology, and her B.S. in ceramic engineering from the University of Illinois, Urbana-Champaign. Schoenung conducts research into structure-processing-property mechanistic relationships with a current focus on high entropy ceramics and additive manufacturing of ceramics, composites, and metals, including the application of alternative feedstock materials generated from waste products. Schoenung is a pioneer in the field of sustainable development of materials with years of experience studying the materials-selection process in a variety of applications. She conducts research into the analysis of factors that guide the materials-selection decision-making process, such as economics, environmental impact and toxicity, cost-performance trade-offs, policy, and sustainability standards.

## PLENARY SESSIONS



### YOUNG- WOOK KIM

Senior Vice President, Worldex Industry & Trading Co., Ltd. Professor Emeritus, University of Seoul, Republic of Korea

### ACerS Edward Orton Jr. Memorial

*Silicon Carbide: The Versatile Ceramic Alloy*

**Tuesday, October 8th**  
**8:00 – 9:00 a.m.**

Silicon carbide-based ceramics are remarkably versatile materials, exhibiting chameleon-like properties that can transition between electrical insulator and conductor, heat-resistant and highly deformable, or thermally conductive and insulating states, depending on their composition and microstructure. This adaptability, achieved through the precise mixing of additives and meticulous microstructure control, positions SiC ceramics as a sophisticated form of ceramic alloy. This presentation will explore various strategies for developing SiC ceramics with tailored properties, focusing on electrically conductive, heat-resistant, tough, and thermally conductive variants. These advancements are realized through careful microstructure manipulation and the judicious selection of sintering additives. The presentation will also introduce two innovative processing strategies: one employing thermodynamic instability principle to achieve microcellular structures, and another demonstrating successful densification of fully ceramic microencapsulated nuclear fuels without applied pressure. Furthermore, practical applications of SiC ceramics in semiconductor processing parts will also be explored.

### About Young-Wook Kim

Dr. Young-Wook Kim is senior vice president of WORLDEX Industry & Trading Co., Ltd. and professor emeritus at the University of Seoul, South Korea. He received an M.S. and Ph.D. in materials science and engineering from the Korea Advanced Institute of Science and Technology and a B.S. in ceramic engineering from Yonsei University. Before joining the WORLDEX Industry & Trading Co., Ltd, he worked as a professor at the University of Seoul and as a senior research scientist at the Korea Institute of Science and Technology. Dr. Kim has authored or co-authored more than 340 journal articles and holds about 60 issued patents. He is an academicien of the World Academy of Ceramics, a fellow of the American Ceramic Society (ACerS), and an honorary fellow of the European Ceramic Society (ECerS). He received the John Jeppson Award, Samuel Geijsbeek PACRIM International Award, Global Star Award, and Global Ambassador awards from ACerS and Richard Brook Award from ECerS. In addition to being a founding member of the ACerS Korea Chapter, Kim is chair of the Engineering Ceramics Division and editor-in-chief of *International Journal of Applied Ceramic Technology*.

# Downtown Pittsburgh Dining Map

## DOWNTOWN

- Alihan's Coffee and Breakfast
- Alihan's Mediterranean Cuisine
- August Henry's City Saloon
- Backstage Bar at Theater Square
- Bakersfield
- Barcacia
- Barcelona Wine Bar
- Bigelow Grille at DoubleTree
- Bill's Bar & Burger
- Blend Bar & Cigars
- Braddock's Rebellion
- Butcher and the Rye
- The Capital Grille
- Christos Mediterranean Grille
- City Works Eatery & Pour House
- CobblerWorld Baked Goods
- The Commoner
- Con Alma
- Condado Tacos
- Crafted North
- Del Frisco's Double Eagle Steakhouse
- Dibella's Subs
- The Eagle Food & Beer Hall
- Eddie Merlot's
- Eddie V's Prime Seafood
- Elevation
- Eleven Contemporary Kitchen
- Ephesus Mediterranean
- Fifth Avenue Place
- Five Iron Golf
- f.l.z.
- Fogo de Chao
- Freshii
- Gi-Jin

- Giovanni's Pizza and Pasta
- Hello Bistro
- Hotel Monaco Biergarten
- Howl at the Moon
- Jimmy John's Sandwiches
- La Gourmandine
- McCormick & Schmick's
- Meat & Potatoes
- Millie's Homemade Ice Cream
- Milk Shake Factory
- Moe's Southwest Grill
- Morton's The Steakhouse
- Nicholas Coffee & Tea Co.
- Ollie's Gastropub
- Original Oyster House
- Palm Court at Omni
- Penn City Grille at Westin
- Penn Society
- Primanti Bros. Market Square
- PrimoHoagies
- Puttery Pittsburgh
- Redbeard's Sports Bar & Grill
- Revel
- Ritual House
- Rock 'n' Joe Coffee Bar
- Ruth's Chris Steak House

- Sally Ann's
- Sienna Mercato
- The Simple Greek
- Sly Fox Taphouse at the Point
- Sly Fox Brewery/Pub at The Highline
- Social Circle
- Social House 7
- Space Bar
- The Speakeasy at Omni
- The Speckled Egg
- The Standard Market & Pint House
- Sullivan's Steakhouse Pittsburgh
- taiko
- Talia Cucina

- Tap/Terrace Room at Omni
- The Terminal
- 3 Rivers Restaurant
- Vallozzi's
- Waffles, INCaaffeinated

## NORTH SHORE

- Bar Louie North Shore
- Bistro To Go Café & Catering
- BURN by Rocky Patel
- Burgatory North Shore
- Foundry Table & Tap
- Hyde Park Prime Steakhouse
- Mike's Beer Bar
- North Shore Tavern
- Rivers Casino Restaurants
- Shorty's Pins x Pints
- Southern Tier Brewery
- Taps & Taco
- Tequila Cowboy
- Tom's Watch Bar

## STRIP DISTRICT

- Cadence+ At The Strip
- Cinderlands Warehouse
- DiAvoia's Eatery
- Enrico Biscotti
- Kaya
- Kingly Spirits
- Pamela's Diner
- PaPa J's Twin Plaza
- Peace, Love and Little Donuts
- Primanti Bros. Strip District
- Salem's Market & Grill
- Soluna Coffee & Mezcal
- The Pennsylvania Market
- The Terminal
- Wigle Whiskey



## MT. WASHINGTON

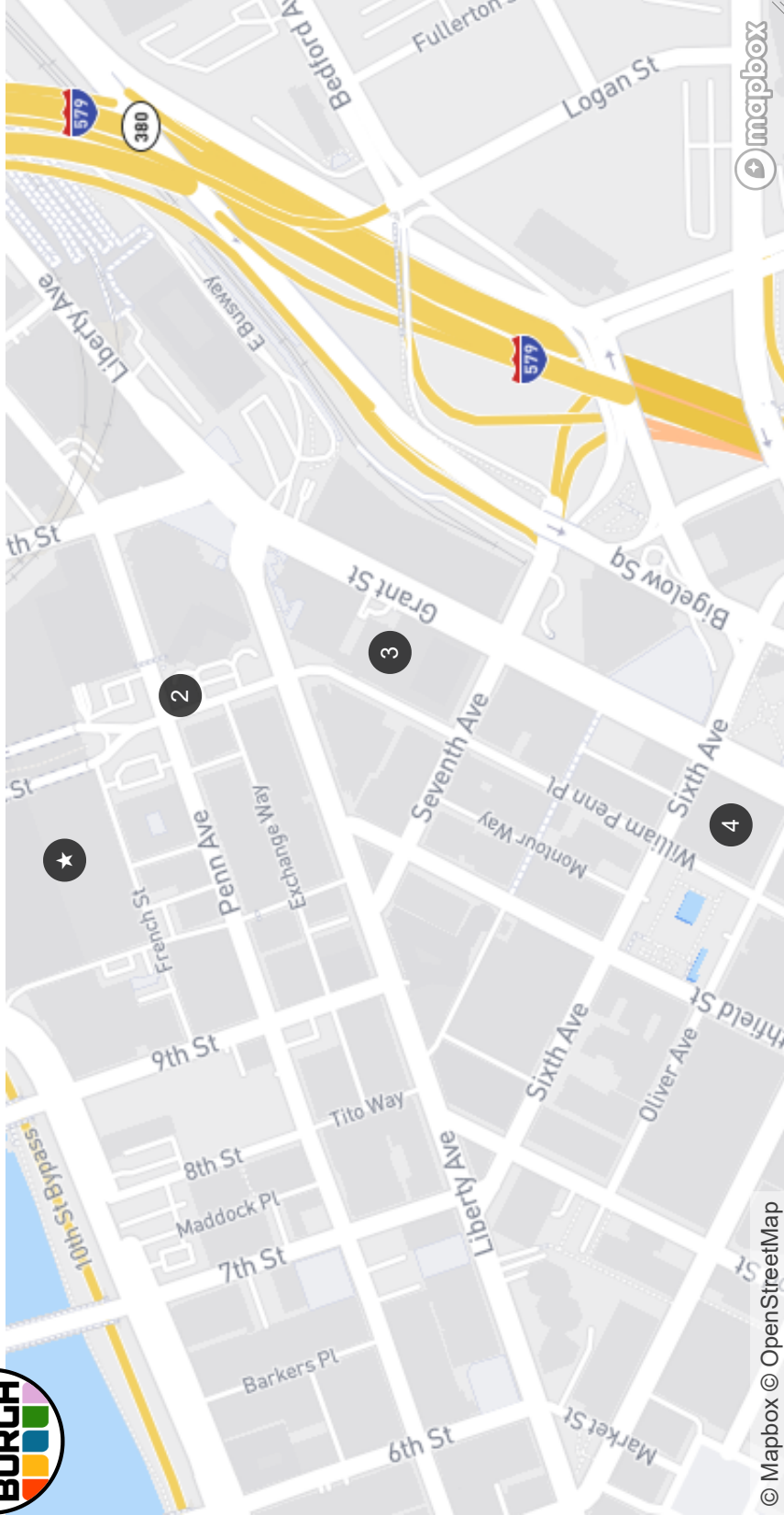
- Bigham Tavern
- Coughlin's Law Kitchen and Ale House
- LeMont Restaurant
- Monterey Bay Fish Grotto
- Redbeard's on Shiloh
- Steel Mill Saloon

## STATION SQUARE

- Hard Rock Cafe
- Grand Concourse
- Texas de Brazil
- The Factory South Shore



# MS&T 2024 Technical Meeting and Exhibition



**★** **David L. Lawrence Convention Center**  
 1000 Fort Duquesne Blvd.  
 Pittsburgh, PA 15222

**1** **Omni William Penn Hotel**  
 Hotels  
 530 William Penn Place  
 Pittsburgh, PA 15219

**2** **Westin Pittsburgh**  
 Hotels  
 1000 Penn Ave.  
 Pittsburgh, PA 15222

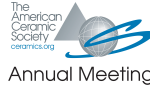
**3** **Drury Plaza - Pittsburgh**  
 Downtown  
 Hotels  
 745 Grant St.  
 Pittsburgh, PA 15219



Step inside these locations in 360° at  
<https://share.threshold360.com/map/57683g>



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MATERIALS SCIENCE & TECHNOLOGY



## CONFERENCE PERKS



MS&T Partners All Conference Reception  
Sponsored by: GE Aerospace Research



Technical Sessions  
*Monday - Wednesday*



Exhibition and  
Poster Session



Lunch in the Exhibit Hall  
*Tuesday + Wednesday\**  
*\*Students receive lunch on Tuesday only*





# CALENDAR OF EVENTS

**Friday, October 4, 2024**

## **Committee and Business Meetings**

### **ACerS President's Council of Student Advisors (PCSA) Business Meeting**

3:30 p.m. – 6:00 p.m. • Omni William Penn Hotel, Bob and Dolores Hope

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**Saturday, October 5, 2024**

## **Committee and Business Meetings**

### **ACerS President's Council of Student Advisors (PCSA) Business Meeting**

7:00 a.m. – 5:00 p.m. • Omni William Penn Hotel, Bob and Dolores Hope

### **ACerS Board of Directors Meeting**

8:30 a.m. – 5:00 p.m. • Omni William Penn Hotel, Lawrence Welk

## **Social Functions**

### **ACerS President's Council of Student Advisors (PCSA) Dinner**

6:00 p.m. – 9:00 p.m. • Omni William Penn Hotel, Riverboat

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**Sunday, October 6, 2024**

## **Conference Activities**

### **Registration**

2:00 p.m. – 7:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### **Society Lounges**

2:00 p.m. – 7:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### **Programming Support Desk**

2:00 p.m. – 5:00 p.m. • David L. Lawrence Convention Center, 3rd Floor by 307/310

## **Exhibition**

### **Exhibitor Move-in: Custom Builds Only**

8:00 a.m. – 5:00 p.m. • David L. Lawrence Convention Center, Hall A

# CALENDAR OF EVENTS

Sunday, October 6, 2024

## Committee and Business Meetings

### ACerS Keramos National Board and Business Meeting

7:00 a.m. – 9:00 a.m. • Omni William Penn Hotel, Omni Restaurant

### ACerS President's Council of Student Advisors (PCSA) Business Meeting (Invite Only)

7:00 a.m. – 11:00 a.m. • Omni William Penn Hotel, Bob & Dolores Hope

### ACerS Keramos Student Chapter Business Meeting

8:00 a.m. – 9:00 a.m. • Omni William Penn Hotel, Monongahela

### TMS Board of Directors Meeting (Restricted)

8:00 a.m. – 2:00 p.m. • Westin Convention Center Hotel, Pennsylvania Ballroom West

### ACerS Keramos Convocation & Business Meeting

9:00 a.m. – 11:00 a.m. • Omni William Penn Hotel, Monongahela

### ACerS Keramos Career Speaker

11:00 a.m. – 12:00 p.m. • Omni William Penn Hotel, Monongahela

### ACerS Mentors Program Mixer

12:00 p.m. – 1:00 p.m. • Omni William Penn Hotel, Shadyside

### ACerS Publications Committee Meeting

12:00 p.m. – 3:00 p.m. • Omni William Penn Hotel, Carnegie III

### CGIF Board of Trustees Meeting

12:00 p.m. – 5:00 p.m. • Omni William Penn Hotel, Allegheny

### Uncertainty Quantification in Ultra-High Temperature Materials Manufacturing Workshop

1:00 p.m. – 6:00 p.m. • Omni William Penn Hotel, Bob & Dolores Hope

### ACerS Editor/AE Meeting

3:00 p.m. – 4:00 p.m. • Omni William Penn Hotel, Carnegie III

## Short Courses *(Advance registration required)*

### Metal Additive Manufacturing Materials and Processes Workshop

8:00 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Room 411

### Powder Materials for Additive Manufacturing and Beyond

1:00 p.m. – 5:00 p.m. • David L. Lawrence Convention Center, Room 411

## Sunday, October 6, 2024

### Material Advantage Student Functions

#### Material Advantage Chapter Officer Workshop (Invite Only)

10:00 a.m. – 12:00 p.m. • Westin Convention Center Hotel, Allegheny Ballroom 1

#### Undergraduate Student Speaking Contest Semi-Finals

1:00 p.m. – 3:00 p.m. • Westin Convention Center Hotel, Allegheny Ballroom 2&3

#### Undergraduate Student Speaking Contest Finals

3:00 p.m. – 4:00 p.m. • Westin Convention Center Hotel, Allegheny Ballroom 2

#### Student Networking Reception

6:00 p.m. – 7:30 p.m. • Westin Convention Center Hotel, Allegheny Ballroom 1

### Posters

#### ACerS Basic Science Division Ceramographic Exhibit and Competition Poster Set Up

12:00 p.m. – 5:00 p.m. • David L. Lawrence Convention Center, Outside Rooms 310-311

### Social Functions

#### MS&T Partners' All Conference Reception Celebrating Our Materials Community and its Diversity, Sponsored by GE Aerospace Research

4:30 p.m. – 5:30 p.m. • David L. Lawrence Convention Center, 2nd floor Concourse



GE Aerospace

#### LGBTQ+ and Allies Reception

8:00 p.m. – 10:00 p.m. • Westin Convention Center Hotel, Allegheny Ballroom 1

## Monday, October 7, 2024

### Conference Activities

#### Registration

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

#### Programming Support Desk

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 3rd Floor by 307/310

#### Society Lounges

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

#### MS&T Technical Sessions

8:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 3rd & 4th Levels

# CALENDAR OF EVENTS

Monday, October 7, 2024

## Exhibition

### Exhibitor Move-in: Custom-builds

8:00 a.m. – 5:00 p.m. • David L. Lawrence Convention Center, Hall A

### Exhibitor Move-in: All Exhibitors

9:00 a.m. – 5:00 p.m. • David L. Lawrence Convention Center, Hall A

### Exhibitor Badge/ Lead Retrieval Collection

12:00 p.m. – 5:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse, Registration Area

## Committee and Business Meetings

### ACerS Young Professional Breakfast Club

7:00 a.m. – 8:30 a.m. • David L. Lawrence Convention Center, Room 309

### ACerS Education and Professional Development Council (EPDC)

10:00 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Room 307

### TMS Executive Committee Meeting (Restricted)

11:30 a.m. – 1:00 p.m. • Westin Convention Center Hotel, Butler East

### Engineering Ceramics Division General Business Meeting

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Room 401

### Electronics Division General Business Meeting

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Room 330

### TMS Integrated Computational Materials Engineering Committee Meeting

12:15 p.m. – 1:45 p.m. • Westin Convention Center Hotel, Somerset

### Bioceramics Business Meeting

2:00 p.m. – 2:30 p.m. • David L. Lawrence Convention Center, Room 321

### Energy Materials and Systems Division General Business Meeting

4:30 p.m. – 5:30 p.m. • David L. Lawrence Convention Center, Room 321

### TMS Powder Materials Committee Meeting

5:00 p.m. – 6:00 p.m. • Westin Convention Center Hotel, Cambria

### ACerS PCSA Humanitarian Pitch Competition

5:45 p.m. – 7:10 p.m. • David L. Lawrence Convention Center, Room 316

### TMS Composite Materials Committee Meeting

6:00 p.m. – 7:00 p.m. • Westin Convention Center Hotel, Fayette

**Monday, October 7, 2024**

## **Committee and Business Meetings**

### **TMS Additive Manufacturing Committee Meeting**

6:00 p.m. – 7:30 p.m. • Westin Convention Center Hotel, Somerset

## **Short Courses**

### **Navigating US Immigration Overcoming a Barrier for Materials Professionals**

5:00 p.m. – 6:30 p.m. • David L. Lawrence Convention Center, Room 403

## **Plenary Sessions**

### **AIST Plenary Session**

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Spirit of Pittsburgh Ballroom B

### **TMS Plenary Session**

2:00 p.m. – 3:00 p.m. • David L. Lawrence Convention Center, Spirit of Pittsburgh Ballroom B

## **Lectures**

### **ACerS/EPDC: Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture**

9:00 – 10:00 a.m. • David L. Lawrence Convention Center, Room 407

### **ACerS Richard M. Fulrath Award Session**

2:20 p.m. – 4:40 p.m. • David L. Lawrence Convention Center, Room 407

## **Material Advantage Student Functions**

### **IGNITE MSE Symposium**

9:00 a.m. – 11:20 a.m. • David L. Lawrence Convention Center, Room 413

### **AIST Student Plant Tour - Cleveland-Cliffs Butler Works**

9:00 a.m. – 1:00 p.m. • David L. Lawrence Convention Center, 1st Floor East Lobby

### **IGNITE MSE Career Panel Luncheon**

11:20 a.m. – 12:50 p.m. • David L. Lawrence Convention Center, Room 413

### **Student Resume Coaching Seminar**

3:00 p.m. – 4:00 p.m. • David L. Lawrence Convention Center, Room 415

# CALENDAR OF EVENTS

**Monday, October 7, 2024**

## **Posters**

### **ACerS Basic Science Division Ceramographic Exhibit and Competition Display**

8:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, Outside 310-311

### **General Poster Installation**

2:00 p.m. – 4:00 p.m. • David L. Lawrence Convention Center, Hall A

## **Social Functions**

### **AIST Steel to Students Reception**

6:00 p.m. – 8:00 p.m. • Westin Convention Center Hotel, Pennsylvania Ballroom

### **ACerS Annual Honor and Awards Reception**

6:00 p.m. – 6:30 p.m. • Omni William Penn Hotel, Urban

### **ACerS Annual Honor and Awards Banquet**

6:30 p.m. – 10:00 p.m. • Omni William Penn Hotel, Grand Ballroom

## **Annual Meetings**

### **ACerS 126th Annual Member Meeting**

1:00 p.m. – 2:00 p.m. • David L. Lawrence Convention Center, Room 407

**Tuesday, October 8, 2024**

## **Conference Activities**

### **Registration**

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### **Programming Support Desk**

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 3rd Floor by 307/310

### **Society Lounges**

7:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### **MS&T Technical Sessions**

8:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, 3rd & 4th Levels

**Tuesday, October 8, 2024**

## **Exhibition**

### **Exhibit Hall Registration**

8:00 a.m. – 5:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse

### **Exhibitor Hall Access**

8:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, Hall A

### **Exhibit Hall Show Hours**

9:00 a.m. – 6:00 p.m. • David L. Lawrence Convention Center, Hall A

### **Technology Showcase Presentations**

10:00 a.m. – 3:20 p.m. • David L. Lawrence Convention Center, Hall A

### **MS&T Food Court (Ticketed Event)**

12:00 p.m. – 2:00 p.m. • David L. Lawrence Convention Center, Hall A

### **Networking Reception Hosted by The Graphene Council**

4:30 p.m. – 6:00 p.m. • David L. Lawrence Convention Center, Networking Lounge

## **Committee and Business Meetings**

### **TMS Education Committee Meeting (Invitation Only)**

7:30 a.m. – 8:30 a.m. • Westin Convention Center Hotel, Westmoreland West

### **AIST University Industry Relations Roundtable**

10:30 a.m. – 1:00 p.m. • Westin Convention Center Hotel, Somerset

### **Glass & Optical Materials Division General Business Meeting**

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Room 414

### **Basic Science Division General Business Meeting**

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Room 403

### **AIST Metallurgy-Processing, Products and Applications Technical Committee Meeting**

12:00 p.m. – 2:00 p.m. • Westin Convention Center Hotel, Pennsylvania Room

# CALENDAR OF EVENTS

Tuesday, October 8, 2024

## Committee and Business Meetings

### ACerS D&I Subcommittee Meeting

2:00 p.m. – 3:00 p.m. • David L. Lawrence Convention Center, Room 308

### TMS International Affairs Committee Meeting (Restricted)

2:00 p.m. – 4:00 p.m. • Westin Convention Center Hotel, Butler East

### AIST Board of Trustees Meeting

2:00 p.m. – 5:00 p.m. • Westin Convention Center Hotel, Exec Boardroom 26th floor

### TMS Professional Development Committee Meeting (Invitation Only)

3:00 p.m. – 4:30 p.m. • Westin Convention Center Hotel, Westmoreland West

### TMS-ACerS MS&T Taskforce

3:30 p.m. – 4:30 p.m. • David L. Lawrence Convention Center, Room 308

### TMS Steels Committee Meeting

5:00 p.m. – 6:00 p.m. • Westin Convention Center Hotel, Fayette

### TMS Program Committee Meeting (Invitation Only)

5:30 p.m. – 7:00 p.m. • Westin Convention Center Hotel, Cambria

### TMS Corrosion & Environmental Effects Committee Meeting

6:30 p.m. – 7:30 p.m. • Westin Convention Center Hotel, Fayette

## Plenary Sessions

### ACerS Session

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Spirit of Pittsburgh Ballroom B

## Lectures

### ACerS Alfred R. Cooper Award Session

9:20 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Room 409

### ACerS Bioceramics Award Session

9:00 a.m. – 9:40 a.m. • David L. Lawrence Convention Center, Room 320

### ACerS Frontiers of Science and Society - Rustum Roy Lecture

1:00 p.m. – 2:00 p.m. • David L. Lawrence Convention Center, Room 407



**Tuesday, October 8, 2024**

## **Material Advantage Student Functions**

### **Mug Drop Contest**

10:45 a.m. – 11:45 a.m. • David L. Lawrence Convention Center, Hall A

### **Disc Golf Contest**

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Hall A

### **Student Awards Ceremony**

2:00 p.m. – 3:00 p.m. • David L. Lawrence Convention Center, Hall A

## **Posters**

### **ACerS Basic Science Division Ceramographic Exhibit & Competition Display**

8:00 a.m. – 5:00 p.m. • David L. Lawrence Convention Center, Outside Rooms 310-311

### **General Poster Install**

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Hall A

### **Undergraduate Student Poster Contest Install**

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Hall A

### **Graduate Student Poster Contest Install**

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Hall A

### **Undergraduate Student Poster Contest Judging**

10:00 p.m. – 11:00 a.m. • David L. Lawrence Convention Center, Hall A

### **Graduate Student Poster Contest Judging**

10:00 p.m. – 11:00 a.m. • David L. Lawrence Convention Center, Hall A

### **Graduate Student Poster Judging with presenter**

11:00 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Hall A

### **General Poster Session Viewing**

2:00 p.m. – 5:00 p.m. • David L. Lawrence Convention Center, Hall A

### **General Poster Session Presentations**

5:00 p.m. – 6:00 p.m. • David L. Lawrence Convention Center, Hall A

## **Social Functions**

### **Energy Material & Systems Division and Electronic Division Reception**

4:00 p.m. – 5:30 p.m. • Omni William Penn Hotel, Carnegie III

### **Austenite Symposium Dinner in Memory of Mats Hillert**

6:00 p.m. – 9:00 p.m. • David L. Lawrence Convention Center, Allegheny Overlook

# CALENDAR OF EVENTS

Wednesday, October 9, 2024

## Conference Activities

### Registration

7:00 a.m. – 4:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### Programming Support Desk

7:00 a.m. – 5:30 p.m. • David L. Lawrence Convention Center, 3rd Floor by 307/310

### Society Lounges

7:00 a.m. – 4:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse A

### MS&T Technical Sessions

8:00 a.m. – 5:30 p.m. • David L. Lawrence Convention Center, 3rd & 4th Levels

## Exhibition

### Exhibit Hall Registration

8:00 a.m. – 3:00 p.m. • David L. Lawrence Convention Center, 2nd Floor Concourse

### Exhibitor Hall Access

8:00 a.m. – 3:00 p.m. • David L. Lawrence Convention Center, Hall A

### Exhibit Hall Show Hours

9:00 a.m. – 3:00 p.m. • David L. Lawrence Convention Center, Hall A

### Graphene Application Sessions

10:00 a.m. – 3:00 p.m. • David L. Lawrence Convention Center, Hall A

### MS&T Food Court (Ticketed Event)

12:00 p.m. – 2:00 p.m. • David L. Lawrence Convention Center, Hall A

### Exhibitor Move-out: All Exhibitors

3:00 p.m. – 8:00 p.m. • David L. Lawrence Convention Center, Hall A

## Committee and Business Meetings

### ACerS Corporate Partner Breakfast

8:00 a.m. – 9:00 a.m. • David L. Lawrence Convention Center, Room 309

### Art, Archaeology & Conservation Science Division General Business Meeting

2:00 p.m. – 2:20 p.m. • David L. Lawrence Convention Center, Room 409

**Wednesday, October 9, 2024**

## **Lectures**

### **ACerS AACS Anna Shepard Award Lecture**

10:20 a.m. – 10:40 a.m. • David L. Lawrence Convention Center, Room 413

### **ACerS Basic Science Division Robert B. Sosman Lecture**

1:00 p.m. – 2:00 p.m. • David L. Lawrence Convention Center, Room 407

## **Material Advantage Student Functions**

### **ACerS Student Tour**

9:00 a.m. – 2:00 p.m. • Omni William Penn Hotel, Hotel Lobby

## **Posters**

### **ACerS Basic Science Division Ceramographic Exhibit & Competition Display**

8:00 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Outside Rooms 310-311

### **General Poster Viewing**

9:00 a.m. – 12:00 p.m. • David L. Lawrence Convention Center, Hall A

### **ACerS Basic Science Division Ceramographic Exhibit Dismantle**

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Hall A

### **General Poster Session Removal**

12:00 p.m. – 1:00 p.m. • David L. Lawrence Convention Center, Hall A

# LECTURES

**Monday, October 7, 2024**

## **ACerS/EPDC Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture**

9:00 a.m. – 10:00 a.m. • David L. Lawrence  
Convention Center, Room 407

**Speaker:** Olivia Graeve, University of California, San Diego

## **ACerS/ Richard M. Fulrath Award Session**

2:20 p.m. – 4:40 p.m. • David L. Lawrence  
Convention Center, Room 407

**This session will feature the following presenters:**

Japanese Academic

Ichiro Fujii, University of Yamanashi

Japanese Industrial

Shuichi Funahashi, Murata Mfg. Co. Ltd.

American Industrial

Valerie Wiesner, NASA Langley Research Center

Japanese Industrial

Kazuyoshi Izawa, Kyocera Corporation

American Academic

Jennifer Rupp, Massachusetts Institute of Technology; Technical University of Munich & TUM International Energy

**Tuesday, October 8, 2024**

## **ACerS Alfred R. Cooper Award Session**

9:20 a.m. – 12:00 p.m. • David L. Lawrence  
Convention Center, Room 409

**Speaker:** Heike Ebendorff-Heidepriem, The University of Adelaide

## **2024 Alfred R. Cooper Young Scholar Award Presentations**

Patrick Lynch, Alfred University

William Fetter, Iowa State University

Julianne Chen, Penn State University

Daniel Wiedeman, University of Central Florida

Kyungmin Yu, Seoul National University

**Tuesday, October 8, 2024**

## **ACerS Bioceramics Awardees**

9:00 a.m. – 9:40 a.m. • David L. Lawrence  
Convention Center, Room 320

**Tadashi Kokubo Award**

Qiang Fu, Corning Inc.

**Bioceramics Young Scholar**

Nicolas Somer, Georgia Institute of Technology

## **ACerS Frontiers of Science and Society – Rustum Roy Lecture**

1:00 p.m. – 2:00 p.m. • David L. Lawrence  
Convention Center, Room 407

**Speaker:** Shunpei Yamazaki, Semiconductor Energy Laboratory Co., Ltd.

**Wednesday, October 9, 2024**

## **ACerS AACS Anna Shepard Award Lecture**

10:20 a.m. – 10:40 a.m. • David L. Lawrence  
Convention Center, Room 413

**Speaker:** Chandra Reedy, University of Delaware

## **ACerS Basic Science Division Robert B. Sosman Lecture**

1:00 p.m. – 2:00 p.m. • David L. Lawrence  
Convention Center, Room 407

**Speaker:** Wai-Yim Ching, University of Missouri-Kansas City

# SPECIAL EVENTS

**Sunday, October 6, 2024**

## **MS&T Partners' All Conference Reception: Celebrating Our Materials Community and Its Diversity Sponsored by GE**

### **Aerospace Research**



GE Aerospace

4:30 p.m. – 5:30 p.m.

David L. Lawrence Convention Center,  
Second Floor Concourse A

Enjoy this opportunity to network with professionals and peers in a relaxed environment.

## **MS&T LGBTQ+ and Allies Reception**

8:00 p.m. – 10:00 p.m.

Westin Convention Center Hotel,  
Allegheny Ballroom 1

Enjoy an evening of informal networking in a safe space to celebrate shared experiences as LGBTQ+ individuals and allies.

**Monday, October 7, 2024**

## **ACerS Basic Science Division Ceramographic Exhibit & Competition**

Various Hours

David L. Lawrence Convention Center,  
Outside Room 310-311

## **ACerS 126th Annual Membership Meeting**

1:00 p.m. – 2:00 p.m.

David L. Lawrence Convention Center,  
Room 407

The president reports on Society activities, and newly elected officers take their positions during the annual membership meeting. All ACerS members and guests are welcome.

**Monday, October 7, 2024**

## **Navigating U.S. Immigration: Overcoming a Barrier for Materials Professionals Workshop**

5:00 p.m. – 6:30 p.m.

David L. Lawrence Convention Center,  
Room 403

How does the U.S. immigration system impact your career in materials science? Join us for a workshop featuring an overview presentation delving into the U.S. immigration process by an immigration lawyer, supplemented by firsthand stories from immigrant materials engineers, followed by an interactive panel discussion. This event welcomes individuals from all corners of materials science and engineering—whether you're a student, a seasoned professional, or a manager navigating the U.S. immigration process yourself or supporting colleagues through it. This event is presented by the TMS Professional Development Committee. There is no charge to attend, and no advance registration is required.

## **AIST Steel to Students Reception**

6:00 p.m. – 8:00 p.m.

Westin Convention Center Hotel,  
Pennsylvania Ballroom

Students with an interest in steel are encouraged to attend this networking event hosted by AIST.

## **ACerS Annual Honor and Awards Banquet (Ticketed Event)**

6:30 p.m. – 10:00 p.m.

Omni Hotel, Grand Ballroom

Enjoy dinner, conversation, and the presentation of Society awards. You can purchase tickets through the MS&T24 Registration platform.

**Tuesday, October 8, 2024**

**ACerS Basic Science Division  
Ceramographic Exhibit & Competition**

8:00 a.m. – 5:00 p.m.

David L. Lawrence Convention Center,  
Outside Rooms 310-311

**Austenite Symposium Dinner in  
Memory of Mats Hillert**

Advance ticket purchase required.

6:00 p.m. – 9:00 p.m.

Westin Convention Center Hotel,  
Allegheny Overlook

**Tuesday, October 8, 2024**

**Networking Reception Hosted by The  
Graphene Council**

4:30 p.m. – 6:00 p.m.

David L. Lawrence Convention Center,  
Networking Lounge



**Wednesday, October 9, 2024**

**ACerS Basic Science Division  
Ceramographic Exhibit & Competition**

8:00 a.m. – 12:00 p.m.

David L. Lawrence Convention Center,  
Outside Rooms 310-311

# STUDENT EVENTS

**Sunday, October 6, 2024**

## **Materials Advantage Chapter Office Workshop FOR CHAPTER OFFICERS ONLY**

10:00 a.m. – 12:00 p.m.

Westin Convention Center Hotel, Allegheny Ballroom

Network and share best practices! This year's Chapter Officer Workshop will take place on Sunday, October 6 from 10:00 a.m. to noon. This workshop provides a detailed introduction to the Material Advantage Student Program for chapter officers.

Registration is required for this workshop as well as for MS&T. This workshop is for Material Advantage Chapter Officers only.

## **2024 Undergraduate Student Speaking Contest**

### **Semi-Finals**

1:00 p.m. – 3:00 p.m.

The Westin Hotel, Allegheny Ballroom 2&3

### **Finals**

3:00 p.m. – 4:00 p.m.

The Westin Hotel, Allegheny Ballroom 1

## **Student Networking Reception**

6:00 p.m. – 7:30 p.m.

Westin Convention Center Hotel, Allegheny Ballroom 1

Students will have the opportunity to interact with each other and with industry professionals in a relaxed setting. Refreshments will be provided. This event is open to all students and faculty advisors. No tickets or reservations are required. Please note that an MS&T conference attendee badge is required to enter the reception.

**Monday, October 7, 2024**

## **IGNITE MSE: Thinking Outside the Lab**

9:00 a.m. – 11:20 a.m. Program

11:20 a.m. – 12:50 p.m. – Luncheon with a career panel, sharing their insights on building careers in the materials science industry  
David L. Lawrence Convention Center, Room 413

Join us for IGNITE MSE, The International Gathering and Networking for Individuals to Explore Materials Science and Engineering, is a program focused on professional development and career exploration for undergraduate and graduate students. The program features a variety of professional development and networking opportunities.

## **AIST Student Plant Tour**

9:00 a.m. – 1:00 p.m.

Cleveland-Cliffs Butler Works

AIST will offer students the opportunity to tour Cleveland-Cliffs Butler Works in Butler, Pennsylvania. Advance registration is required. Pick up in DLCC-East Lobby

Butler Works is located in western Pennsylvania. The facility produces electrical, stainless and carbon steels. Butler Works is the only steel mill in North America that produces both Grain Oriented Electrical Steel (GOES) and Non-Oriented Electrical Steel (NOES). GOES is used in distribution and power transformers and NOES is used in the most efficient electric motors.

## **Student Resume Coaching Workshop**

3:00 p.m. – 4:00 p.m.

David L. Lawrence Convention Center, Room 415

The key to securing an internship or job after graduation is a great resume! All MS&T24 student registrants will have the opportunity to attend this free workshop and receive advice from an industry hiring professional. Perfecting your resume will ensure

# STUDENT EVENTS

## Student Resume Coaching Workshop (con't.)

you have a better chance at standing out from other candidates and easily earning an interview with their desired employer. **Advance registration is required.**

**Monday, October 7, 2024**

## Navigating U.S. Immigration: Overcoming a Barrier for Materials Professionals Workshop

5:00 p.m. – 6:30 p.m.

David L. Lawrence Convention Center,  
Room 403

How does the U.S. immigration system impact your career in materials science? Join us for a workshop featuring an overview presentation delving into the U.S. immigration process by an immigration lawyer, supplemented by firsthand stories from immigrant materials engineers, followed by an interactive panel discussion. This event welcomes individuals from all corners of materials science and engineering—whether you're a student, a seasoned professional, or a manager navigating the U.S. immigration process yourself or supporting colleagues through it. This event is presented by the TMS Professional Development Committee. There is no charge to attend, and no advance registration is required.

## AIST Foundation Steel to Students Recruiting Reception

6:00 p.m. – 8:00 p.m.

Westin Convention Center Hotel,  
Pennsylvania Ballroom

Position yourself ahead of your peers by attending the Steel to Students Recruiting Reception held in conjunction with MS&T24! The reception is a golden opportunity to meet established professionals and hiring managers interested in investing in the next generation of the steel industry. Take advantage of the opportunity to network and maybe even secure an internship or job after graduation!

**Tuesday, October 8, 2024**

## 2024 Undergraduate Student Poster Contest

Judges Only Time: 10:00 a.m. – 11:00 a.m.

Judges and Students Time: 11:00 a.m. – 12:00 p.m.

David L. Lawrence Convention Center,  
Exhibit Hall A

The purpose of this contest is to encourage graduate students to present their graduate research experiences and to improve their communication skills. The poster entered must be the work of a graduate student and completed during the graduate education of the student.

The work presented in the poster does not have to be performed at the student's home institution, but could be, for example, from a project performed as part of a co-op experience or a summer internship.

First, second, and third places will be given in the amounts of \$250, \$150, and \$100, respectively. All graduate students are eligible to enter the poster contest. The winners will be announced at the student awards ceremony at MS&T.



**Tuesday, October 8, 2024**

## **2024 Graduate Student Poster Contest**

David L. Lawrence Convention Center,  
Exhibit Hall A

The purpose of this contest is to encourage graduate students to present their graduate research experiences and to improve their communication skills. The poster entered must be the work of a graduate student and completed during the graduate education of the student.

The work presented in the poster does not have to be performed at the student's home institution, but could be, for example, from a project performed as part of a co-op experience or a summer internship.

First, second, and third places will be given in the amounts of \$250, \$150, and \$100, respectively. All graduate students are eligible to enter the poster contest. The winners will be announced at the student awards ceremony at MS&T.

## **Ceramic Mug Drop Contest (con't.)**

Please note that students who chose to make fiber-reinforced mugs may use individual commercial fibers in the construction of their mug, but the use of commercially woven mats is not allowed.

Each participant may register their mug(s) onsite.

## **Ceramic Disc Golf Contest**

12:00 p.m. – 1:00 p.m.

David L. Lawrence Convention Center,  
Exhibit Hall A

This contest always draws a crowd! Students create discs from ceramic or glass materials to meet certain specifications, and the discs are thrown into a regulation disc golf basket. Each disc will be judged in the categories of farthest distance achieved and artistic merit (aesthetics). The disc that is successfully thrown into the disc golf basket from the farthest distance in the fewest number of shots will be named winner of the Ceramic Disc Golf Contest, and the most aesthetically pleasing/creative disc will be recorded as "Best Looking" disc.

Each participant may register their disc(s) onsite.

## **Student Awards Ceremony**

2:00 p.m. – 3:00 p.m.

David L. Lawrence Convention Center,  
Exhibit Hall A

Congratulate the winners of this year's contests: Material Advantage Chapters of Excellence, Student Speaking Contest, Graduate and Undergraduate Poster Contests, Ceramic Mug Drop Contest, Ceramic Disc Golf Contest, TMS Superalloys Awards, AIST/AISI Scholarships, and Keramos National Awards.

**Tuesday, October 8, 2024**

## **Ceramic Mug Drop Contest**

10:45 a.m. – 11:45 a.m.

David L. Lawrence Convention Center,  
Exhibit Hall A

The Ceramic Mug Drop contest allows students to demonstrate their prowess in designing and manufacturing a ceramic mug possessing high strength, mechanical reliability, and/or aesthetics. Mugs fabricated by students from ceramic raw materials are judged (separately) on aesthetics and then by dropping them from ever-increasing heights. The mug with the highest successful drop height will win!

## UPCOMING CONFERENCES

### CONTINUOUS CASTING – A PRACTICAL TRAINING SEMINAR

October 22 – 24, 2024 | Corpus Christi, OH, USA  
**Sponsor:** AIST

### THE MAKING, SHAPING AND TREATING OF STEEL: 101

October 24 – 25, 2024 | Cleveland, OH, USA  
**Sponsor:** AIST

### EUROPEAN STEEL FORUM

November 5 – 7, 2024 | Essen, Germany  
**Sponsor:** AIST

### MATERIAL HANDLING/TRANSPORTATION & LOGISTICS WORKSHOP

November 12 – 14, 2024 | Houston, TX, USA  
**Sponsor:** AIST

### ENVIRONMENTAL SOLUTIONS: AIR & DECARBONIZATION

November 12-14, 2024 | Orlando, FL, USA  
**Sponsor:** AIST

### TMS INDUSTRIAL ALUMINUM ELECTROLYSIS COURSE: ADVANCING ALUMINUM PRODUCTION (IAE 2024)

December 1 – 6, 2024 | Sydney, Australia  
**Sponsor:** TMS

### 49TH INTERNATIONAL CONFERENCE AND EXPO ON ADVANCED CERAMICS AND COMPOSITES (ICACC 2025)

January 26 – 31, 2025 | Daytona Beach, FL, USA  
**Sponsor:** ACerS

### PROJECT MANAGEMENT 101

January 28 – 29, 2025 | Ft. Worth, TX, USA  
**Sponsor:** AIST

### EMA 2025: BASIC SCIENCE AND ELECTRONICS DIVISION MEETING

February 25 – 28, 2025 | Denver, CO, USA  
**Sponsor:** ACerS

### AUTOMOTIVE STEEL INTERNATIONAL CONFERENCE

March 9 – 12, 2025 | Orlando, FL, USA  
**Sponsor:** AIST

### EXPO ACERO 2025

March 24 – 26, 2025 | Monterrey, NL, Mexico  
**Sponsor:** AIST

### TMS 2025 ANNUAL MEETING & EXHIBITION (TMS2025)

March 23 – 27, 2025 | Las Vegas, NV, USA  
**Sponsor:** TMS

### 16TH PACIFIC RIM CONFERENCE ON CERAMIC AND GLASS TECHNOLOGY INCLUDING GLASS & OPTICAL MATERIALS DIVISION MEETING (GOMD 2025)

May 4 – 9, 2025 | Vancouver, British Columbia, Canada  
**Sponsor:** ACerS

### AISTECH 2025 – THE IRON & STEEL TECHNOLOGY CONFERENCE & EXPOSITION

May 5 – 8, 2025 | Nashville, TN, USA  
**Sponsor:** AIST

### OFFSHORE TECHNOLOGY CONFERENCE (OTC) 2025

May 5 – 8, 2025 | Houston, TX, USA  
**Sponsor:** TMS

### 2025 STRUCTURAL CLAY PRODUCTS DIVISION & SOUTHWEST SECTION MEETING IN CONJUNCTION WITH THE NATIONAL BRICK RESEARCH CENTER MEETING

June 9 – 11, 2025 | Birmingham, AL, USA  
**Sponsor:** ACerS

### 15TH ADVANCES IN CEMENT BASED MATERIALS

June 11 – 13, 2025 | University of Colorado Boulder, CO, USA  
**Sponsor:** ACerS

### TMS SPECIALTY CONGRESS 2025

June 15 – 19, 2025 | Anaheim, CA, USA  
**Sponsor:** TMS

### MATERIAL SCIENCE AND TECHNOLOGY 2025 (MS&T)

September 28 – October 1, 2025 | Columbus, OH, USA  
**Sponsor:** ACerS, AIST, TMS

## ABOUT THE ORGANIZERS

Organized by the leading materials societies:



Annual Meeting

**The American Ceramic Society** is the premier global membership organization for the technical ceramics and glass community. Celebrate with us Monday evening at the ACerS 126th Annual Honors and Awards Banquet for the induction of the 2024 Class of Fellows and awards presentations. The Society's prestigious award lectures will be presented at MS&T24: ACerS/EPDC: **Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture, Frontiers of Science and Society - Rustum Roy Lecture, Edward Orton, Jr. Memorial Lecture and Robert B. Sosman Lecture**. All attendees are welcome to attend the ACerS lectures. Be sure to stop by the member lounge to relax between the sessions, network with peers, hear what's new with the Society and much more.

Visit [www.ceramics.org](http://www.ceramics.org) to learn more about ACerS.



**The Association for Iron & Steel Technology (AIST)** is a non-profit entity with over 17,500 members from more than 70 countries. AIST is recognized as a global leader in networking, education and sustainability programs for advancing iron and steel technology. Serving the entire iron and steel community, including steel manufacturers, suppliers, consumers and academics, our mission is to advance the technical development, production, processing and application of iron and steel.

Visit [www.aist.org](http://www.aist.org) to learn more about AIST.



**The Minerals, Metals & Materials Society (TMS)** is a member-driven international professional society dedicated to fostering the exchange of learning and ideas across the entire range of minerals, metals, and materials science and engineering, from minerals processing and primary metals production, to basic research and the advanced applications of materials. Included among its more than 12,000 professional and student members are metallurgical and materials engineers, scientists, researchers, educators, and administrators from more than 80 countries on six continents.

Visit [www.tms.org](http://www.tms.org) to learn more about TMS.

# Program At A Glance

Topic Area/Symposium	Date	Time	Room
<b>Program Highlights</b>			
AIST Plenary Session	MON	AM	Ballroom B
TMS Plenary Session	MON	PM	Ballroom B
ACerS Plenary Session	TUE	AM	Ballroom B
MS&T24 Poster Session	TUE	PM	Hall A
ACerS AACs Anna Shepard Award Lecture	WED	AM	413
ACerS Alfred R. Cooper Award Session	TUE	AM	409
ACerS Basic Science Robert B. Sosman Lecture	WED	PM	407
ACerS Bioceramics Awardees	TUE	AM	320
ACerS Frontiers of Science and Society - Rustum Roy Lecture	TUE	PM	407
ACerS Richard M. Fulrath Award Session	MON	PM	407
ACerS/EPDC: Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture	MON	AM	407
<b>Additive Manufacturing</b>			
<b>Additive Manufacturing Modeling, Simulation, and Machine Learning: Microstructure, Mechanics, and Process</b>			
AM Modeling - Integrated Computational Materials Engineering (ICME) / Mechanical Properties I	TUE	AM	302
AM Modeling - Mechanical Properties II / Microstructures I	TUE	PM	302
Poster Session	TUE	PM	Hall A
AM Modeling - ML/AI / Directed Energy Deposition (DED)	WED	AM	302
AM Modeling - Microstructures II	WED	PM	302
<b>Additive Manufacturing of Ceramic-based Materials: Process Development, Materials, Process Optimization and Applications</b>			
Additive Manufacturing of Ceramic-based Materials I	MON	AM	304
Additive Manufacturing of Ceramic-based Materials II	MON	PM	304
<b>Additive Manufacturing of Metals: Microstructure, Properties and Alloy Development</b>			
Additive Manufacturing of Al-Based Alloys	MON	PM	301
Additive Manufacturing - Fe-Based Alloys	TUE	PM	301
Additive Manufacturing - Composites, Graded Materials, HEA, and Cermets	TUE	AM	301
Additive Manufacturing - Non-Ferrous Materials	WED	AM	301
Additive Manufacturing - Miscellaneous	WED	PM	301
<b>Additive Manufacturing of Polymer-involved Ceramic and Metal Composites</b>			
Additive Manufacturing of Polymer-involved Ceramic and Metal Composites	MON	PM	305
<b>Additive Manufacturing of Polymeric-based Materials: Potentials and Challenges</b>			
Revolutionizing Applications and Unleashing the Potential of Polymer-based Additive Manufacturing	MON	AM	302
Exploring the Additive Manufacturing Frontier of Polymeric Composites	MON	PM	302
<b>Additive Manufacturing of Titanium-based Materials: Processing, Microstructure and Material Properties</b>			
Laser Powder Bed Fusion	TUE	AM	305
DED and Other Technologies	TUE	PM	305
<b>Additive Manufacturing: Artificial Intelligence and Data Driven Approaches</b>			
AI and Data Driven Approaches	MON	PM	306
<b>Additive Manufacturing: Design, Materials, Manufacturing, Challenges and Applications</b>			
Session I	TUE	PM	306
Poster Session	TUE	PM	Hall A
Session II	WED	AM	303
Session III	WED	PM	303

Topic Area/Symposium	Date	Time	Room
<b>Additive Manufacturing: Equipment, Instrumentation and In-Situ Process Monitoring</b>			
Session I: Additive Manufacturing: Equipment, Instrumentation and In-Situ Process Monitoring	MON	AM	303
Session II: Additive Manufacturing: Equipment, Instrumentation and In-Situ Process Monitoring	MON	PM	303
Session III: Additive Manufacturing: Equipment, Instrumentation and In-Situ Process Monitoring	TUE	AM	306
Poster Session	TUE	PM	Hall A
<b>Additive Manufacturing: Interactions between Energy and Materials</b>			
Additive Manufacturing: Energy-Matter Interactions	MON	AM	305
<b>Additive Manufacturing: Microstructure, Defects, and Properties</b>			
Phase Stability in Extreme Environments	MON	AM	306
AM of Steels	TUE	AM	304
AM of Ni-based Alloys	TUE	PM	304
Poster Session	TUE	PM	Hall A
Modeling and Characterization	WED	AM	304
AM of Other Metallic Systems	WED	PM	304
<b>Advanced Manufacturing of High Temperature Ceramics and Composites: Processing, Characterization and Testing</b>			
Additive Manufacturing of Ceramic Monoliths	TUE	AM	303
AM of CMCs / Traditional Ceramic and CMC Manufacturing	TUE	PM	303
Poster Session	TUE	PM	Hall A
<b>Opportunities and Applications of Solid-State Additive Manufacturing Processes</b>			
Additive Friction Stir Deposition and Cold Spray	WED	AM	305
Ultrasonic AM, Binder Jetting, and Hybrid Manufacturing	WED	PM	305
<b>Standards for Data Science in Additive Manufacturing</b>			
Standards for Data Science in Additive Manufacturing	MON	AM	301
<b>Artificial Intelligence</b>			
<b>Frontiers of Machine Learning on Materials Discovery</b>			
Frontiers of Machine Learning Session I	TUE	PM	311
Frontiers of Machine Learning Session II	WED	AM	311
Frontiers of Machine Learning Session III	WED	PM	311
<b>Integrated Computational Materials Engineering for Physics-Based Machine Learning Models</b>			
Poster Session	TUE	PM	Hall A
Integrated Computational Materials Engineering for Physics-Based Machine Learning Models	WED	AM	310
<b>Machine Learning and Simulations</b>			
Machine Learning and Simulations I	MON	AM	310
Machine Learning and Simulations II	MON	PM	310
Poster Session	TUE	PM	Hall A
<b>Materials Informatics for Images and Multi-dimensional Datasets</b>			
Session I	TUE	AM	310
Session II	TUE	PM	310
<b>Materials Processing and Fundamental Understanding Based on Machine Learning and Data Informatics</b>			
Materials Design and Innovation / Physical Property Exploration	MON	AM	311
Poster Session	TUE	PM	Hall A
<b>Biomaterials</b>			
<b>3D Printing of Biomaterials and Devices</b>			
Poster Session	TUE	PM	Hall A
3D Printing of Biomaterials and Devices I	WED	AM	319
3D Printing of Biomaterials and Devices II	WED	PM	319

# Program At A Glance

Topic Area/Symposium	Date	Time	Room
<b>Next Generation Biomaterials</b>			
Next Generation Biomaterials I	MON	AM	320
Next Generation Biomaterials II	MON	PM	320
Next Generation Biomaterials III	TUE	AM	320
Next Generation Biomaterials IV	TUE	PM	320
Poster Session	TUE	PM	Hall A
Next Generation Biomaterials V	WED	AM	320
Next Generation Biomaterials VI	WED	PM	320
<b>Society for Biomaterials: Biological Response to Materials and Material's Response to Biological Environments</b>			
Society for Biomaterials: Biological Response to Materials and Material's Response to Biological Environments	WED	AM	321
<b>Society for Biomaterials: Biomaterial Applications</b>			
Podium Session	TUE	AM	321
Poster Session	TUE	PM	Hall A
<b>Society for Biomaterials: Biomaterial Applications in Today's Industry: Development, Translation &amp; Commercialization</b>			
Session I	MON	AM	321
<b>Society for Biomaterials: Student Poster Contest + Rapid Fire</b>			
Presentations	TUE	PM	321
Poster Session	TUE	PM	Hall A
<b>Ceramic and Glass Materials</b>			
<b>ACerS-ECerS Joint Symposium: Emerging Leaders in Glass and Ceramics</b>			
Session I	MON	AM	408
Session II	MON	PM	408
<b>Advances in Dielectric Materials and Electronic Devices</b>			
Novel Processing of Functional Ceramics	TUE	AM	410
Semiconductors & Memory Devices; Conductors, Dielectrics, & Ferroelectrics	TUE	PM	410
Poster Session	TUE	PM	Hall A
Materials for Energy Storage/Conversion and Antibacterial Applications; Thermoelectrics & Magnetoelectrics	WED	AM	410
Scintillators and EMI Shielding	WED	PM	410
<b>Engineering Ceramics: Microstructure-Property-Performance Relations and Applications</b>			
Engineering Ceramics: Microstructure-Property-Performance Relations and Applications I	MON	AM	414
Engineering Ceramics: Microstructure-Property-Performance Relations and Applications II	TUE	PM	409
Poster Session	TUE	PM	Hall A
Engineering Ceramics: Microstructure-Property-Performance Relations and Applications III	WED	AM	409
<b>Glasses and Optical Materials: Current Issues and Functional Applications</b>			
Glasses and Optical Materials: Current Issues and Functional Applications	MON	PM	409
ACerS Alfred R. Cooper Award Session	TUE	AM	409
<b>Manufacturing and Processing of Advanced Ceramic Materials</b>			
New Frontiers in Advanced Manufacturing of Ceramic Materials	MON	AM	409
Advances in Ceramic Processing I: Sintering	TUE	AM	411
Special Session: Uncertainty Quantification in Manufacturing	TUE	PM	411
Poster Session	TUE	PM	Hall A
Advances in Ceramic Processing II: Applications	WED	AM	411
Novel Processing of Ceramics I	WED	PM	411
Novel Processing of Ceramics II	WED	PM	412

Topic Area/Symposium	Date	Time	Room
<b>Mesoscale Phenomena in Functional Polycrystals and Their Nanostructures</b>			
Session I: Optical Properties, Grains and Domains	MON	AM	410
Session II: Tribology, Thermal Properties, Carbon and Nanostructures	MON	PM	410
Poster Session	TUE	PM	Hall A
<b>Phase Transformations in Ceramics: Science and Applications</b>			
Session I	WED	AM	412
<b>Preceramic Polymers; Synthesis, Processing, Modeling, and Derived Ceramics</b>			
Preceramic Polymers; Synthesis, Processing, Modeling, and Derived Ceramics I	MON	AM	411
Preceramic Polymers; Synthesis, Processing, Modeling, and Derived Ceramics II	MON	PM	411
<b>Solid-state Optical Materials and Luminescence Properties</b>			
Solid-state Optical Materials and Luminescence Properties I	WED	AM	408
Solid-state Optical Materials and Luminescence Properties II	WED	PM	408
<b>The American Ceramic Society Journal Awards Symposium</b>			
Session I	TUE	AM	408
Session II	TUE	PM	408
<b>Fundamentals and Characterization</b>			
<b>Computational Materials for Qualification and Certification</b>			
Overview and "State of Practice" Assessment	MON	AM	323
Defects and Heat Transfer	MON	PM	323
Materials Properties and Performance	TUE	AM	323
Fatigue and Fracture	TUE	PM	323
Thermal Simulations and Phase Transformations	WED	AM	333
Panel Discussion and Regulatory Considerations	WED	PM	333
<b>Emergent Materials under Extremes and Decisive In Situ Characterizations</b>			
In Situ Characterization Under Extreme Conditions	TUE	PM	326
Next-Generation X-Ray and Neutron Capabilities and High-Pressure Research	WED	AM	326
<b>Fracture in Metals: Insights from Experiments and Modeling Across Length and Time Scales</b>			
Modeling and Simulations	MON	AM	326
Experimental Insights	MON	PM	326
Experiments, Modeling, and Machine Learning	TUE	AM	326
<b>Grain Boundaries, Interfaces, and Surfaces: Fundamental Structure-Property-Performance Relationships</b>			
Grain Growth	MON	AM	325
Segregation	MON	PM	325
Grain Boundary & Interface Stability and Transitions	TUE	AM	325
Boundaries in Functional Ceramics	TUE	PM	325
Poster Session	TUE	PM	Hall A
Mechanical Properties & Mechanics	WED	AM	325
Computational Modeling & Data Analytics (Sintering & Grain Boundaries in Metals)	WED	PM	325
<b>High Entropy Materials: Concentrated Solid Solutions, Intermetallics, Ceramics, Functional Materials and Beyond V</b>			
Session I	MON	AM	324
Session II	MON	PM	324
Session III	TUE	AM	324
Session IV	TUE	PM	324
Session V	TUE	PM	328
Poster Session	TUE	PM	Hall A
Session VI	WED	AM	323
Session VII	WED	AM	324
Session VIII	WED	PM	323
Session IX	WED	PM	324

# Program At A Glance

Topic Area/Symposium	Date	Time	Room
<b>Solid-State Transformations Under Complex Thermal Conditions</b>			
Characterization	MON	AM	327
Microstructural Evolution Prediction	MON	PM	327
<b>Uncertainty Quantification Applications in Materials and Engineering</b>			
UQ Tools, Sensitivity Analysis, and Surrogate Models	TUE	AM	327
Surrogate Models, Calibration Methods, and Examples	TUE	PM	327
<b>Understanding High Entropy Materials via Data Science and Computational Approaches</b>			
Session I	TUE	PM	413
Session II	WED	AM	327
Session III	WED	PM	327
<b>Iron and Steel (Ferrous Alloys)</b>			
<b>Advancements in Steel Structural Refinement</b>			
Advancements in Steel Structural Refinement	TUE	AM	404
<b>Advances in Metallic Coated Advanced Steels</b>			
Advances in Metallic Coated Advanced Steels	MON	PM	404
<b>Austenite Formation and Decomposition V: A Symposium in Memory of Prof. Mats Hillert</b>			
Microstructure I	MON	AM	Ballroom B
Microstructure II	MON	PM	405
Processing	TUE	AM	405
Theory and Modeling	TUE	PM	405
Poster Session	TUE	PM	Hall A
Alloying	WED	AM	405
<b>Electrification of Iron and Steel</b>			
Keynote Session	TUE	PM	404
Green Ironmaking, Ore Beneficiation, & Cross-Pollination	WED	AM	404
Green Steelmaking	WED	PM	404
<b>Segregation in Steels</b>			
Segregation in Steels	MON	AM	404
Poster Session	TUE	PM	Hall A
<b>Steels for Sustainable Development III</b>			
Joint Session: Steels for Sustainable Development & Application of ICME Methods to Advance Sustainable Metallurgy and Metals Processing	MON	AM	405
Design and Characterization	TUE	AM	403
Processing	TUE	PM	403
Poster Session	TUE	PM	Hall A
<b>Lightweight Alloys</b>			
<b>Advancements in Lightweight Composites, Materials &amp; Alloys</b>			
High Temperature Applications	MON	AM	402
Microstructure and Properties	MON	PM	402
Machine Learning and Microstructure of Composites	TUE	AM	402
Manufacturing Processes and Properties	TUE	PM	402
<b>Composition-Processing-Microstructure-Property Relationships of Titanium Alloys</b>			
Poster Session	TUE	PM	Hall A
Deformation Behavior/3D Printing	WED	AM	402
Microstructural Characterization/Alloy Development	WED	PM	402
<b>Impurity-Tolerant Alloy Design, Development, and Production</b>			
Impurity-Tolerant Alloy Design, Development, and Production	MON	PM	403
<b>Light Alloys, Advanced Forming Processes and Characterization</b>			
Light Alloys, Advanced Forming Processes and Characterization	MON	AM	403
Poster Session	TUE	PM	Hall A



Topic Area/Symposium	Date	Time	Room
<b>Light Metal Technology</b>			
Light Metal Technology	WED	AM	403
<b>Materials-Environment Interactions</b>			
<b>Advanced Coatings for Wear and Corrosion Protection</b>			
Advanced Coatings for Wear and Corrosion Protection I	MON	PM	335
Poster Session	TUE	PM	Hall A
<b>Advanced Materials for Harsh Environments</b>			
Session I	MON	PM	330
Session II	TUE	AM	333
Session III	TUE	PM	333
Poster Session	TUE	PM	Hall A
<b>Advances in High-Temperature Oxidation and Degradation of Materials for Harsh Environments: A SMD and FMD Symposium Honoring Brian Gleeson</b>			
Fundamentals of Oxidation and Materials Degradation	MON	AM	334
Alloy Development and High-Temperature Oxidation I	MON	PM	334
Alloy Development and High-Temperature Oxidation II	TUE	AM	334
Materials Design and Deposition-Induced Degradation and Complex Environment	TUE	PM	334
Poster Session	TUE	PM	Hall A
Interface, Coating, and Properties for High-Temperature Performance	WED	AM	334
<b>Corrosion and Environmental Degradation: Theory and Practice</b>			
Session I	TUE	AM	335
Session II	TUE	PM	335
Session III	WED	AM	335
<b>Thermodynamics of Materials in Extreme Environments</b>			
Frontiers of Thermodynamics	MON	AM	333
Thermodynamics of Ceramic and Intermetallic Systems	MON	PM	333
Thermodynamics of Molten Salt Systems	TUE	AM	413
Poster Session	TUE	PM	Hall A
<b>Modeling</b>			
<b>Advances in Multiphysics Modeling and Multi-modal Imaging of Functional Materials</b>			
Multimodal Imaging of Functional Materials	MON	PM	414
Advanced Mathematical Algorithms, AI, and Reduced-Order Model for Materials Modeling	TUE	AM	414
Multiphysics Modeling of Materials and Devices I	TUE	PM	414
Poster Session	TUE	PM	Hall A
Multiphysics Modeling of Materials and Devices II	WED	PM	414
<b>Computation Assisted Materials Development for Improved Corrosion Resistance</b>			
Computation Assisted Materials Development for Improved Corrosion Resistance	WED	AM	414
<b>Nanomaterials</b>			
<b>Advances in Emerging Electronic Nanomaterials: Towards Next-Generation Microelectronics</b>			
Neuromorphic Devices and 2D Materials	TUE	PM	318
Functional Materials and Devices I	WED	AM	318
Functional Materials and Devices II	WED	PM	318
<b>Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials</b>			
Nanoparticles	MON	AM	319
2D Materials	MON	PM	319
Energy & Plasmonic Applications	TUE	AM	319
Mechanical & Other Applications	TUE	PM	319
Poster Session	TUE	PM	Hall A
<b>Nanotechnology for Energy, Environment, Electronics, Healthcare and Industry</b>			
Session I	MON	AM	318

# Program At A Glance

Topic Area/Symposium	Date	Time	Room
<b>Nuclear Energy</b>			
<b>Advanced Characterization of Materials for Nuclear, Radiation, and Extreme Environments V</b>			
Session I	TUE	AM	330
Session II	TUE	PM	330
Poster Session	TUE	PM	Hall A
Session III	WED	AM	330
Session IV	WED	PM	330
<b>Ceramic Materials for Nuclear Energy Systems</b>			
Ceramic and Glass Waste Forms	MON	AM	329
Ceramic Waste Forms & Molten Salts	MON	PM	329
Ceramic Fuels	TUE	AM	329
TRISO Fuels and Oxides	TUE	PM	329
Poster Session	TUE	PM	Hall A
Ceramics for Structure, Coating, Shielding & Fusion	WED	AM	329
<b>Progressive Solutions to Improve Corrosion Resistance of Nuclear Waste Storage Materials</b>			
Borosilicate Glass Nuclear Waste Forms and Stainless Steel Canisters for Radioactive Wastes	WED	AM	328
<b>Tackling Metallic Structural Materials Challenges for Advanced Nuclear Reactors</b>			
Defects and Microstructural Features	MON	AM	328
Structural Materials in Corrosive Environments	MON	PM	328
Advanced Nuclear Materials	TUE	AM	328
Poster Session	WED	PM	Hall A
<b>Processing and Manufacturing</b>			
<b>Advanced Joining Technologies for Automotive Lightweight Structures</b>			
Experimental and Simulation Studies of Material Performance during Joining and Processing	MON	PM	401
<b>Processing and Performance of Materials Using Microwaves, Electric and Magnetic Fields, Ultrasound, Lasers, and Mechanical Work – Rustum Roy Symposium</b>			
Session I	TUE	AM	401
Session II	TUE	PM	401
Poster Session	TUE	PM	Hall A
<b>Sustainability, Energy, and the Environment</b>			
<b>16th Symposium on Green and Sustainable Technologies for Materials Manufacturing and Processing</b>			
Sustainable Technologies I	MON	AM	317
Sustainable Technologies II	MON	PM	317
Sustainable Technologies III	TUE	AM	317
Sustainable Technologies IV	TUE	PM	317
Poster Session	TUE	PM	Hall A
<b>Advanced Ceramics for Environmental Remediation</b>			
Session I	MON	AM	312
Session II	MON	PM	312
Poster Session	TUE	PM	Hall A
<b>Advances in Materials and Systems for a Hydrogen Economy</b>			
Hydrogen Production, Separation, and Storage	TUE	AM	316
Hydrogen Utilization and Industrial Decarbonization	TUE	PM	316
Poster Session	TUE	PM	Hall A
Hydrogen Transportation and Storage Issues; Hydrogen Embrittlement	WED	AM	316
High Temperature Materials Degradation in Hydrogen Environment; Advances in Characterization Techniques	WED	PM	316

Topic Area/Symposium	Date	Time	Room
<b>Application of ICME Methods to Advance Sustainable Metallurgy and Metals Processing</b>			
Joint Session: Steels for Sustainable Development & Application of ICME Methods to Advance Sustainable Metallurgy and Metals Processing	MON	AM	405
Poster Session	TUE	PM	Hall A
Application of ICME Methods to Advance Sustainable Metallurgy and Metals Processing	WED	AM	317
<b>Ceramics for Clean Hydrogen</b>			
Ceramics for Clean Hydrogen I	TUE	AM	312
Ceramics for Clean Hydrogen II	TUE	PM	312
<b>Energy Materials for Sustainable Development</b>			
Thermoelectrics I	MON	AM	315
Thermoelectrics II	MON	AM	315
Emerging Energy Materials	MON	PM	318
Thermoelectrics III	TUE	AM	315
Energy Harvesting I	TUE	PM	315
Poster Session	TUE	PM	Hall A
Energy Harvesting II	WED	AM	315
Batteries and Storages I	WED	AM	312
Batteries and Storages II	WED	PM	312
Fuel Cells and Electrolyzers	WED	PM	315
<b>Enhancing Recycling and Reuse of Secondary Materials to Support a Circular Economy</b>			
Enhancing Recycling and Reuse of Secondary Materials to Support a Circular Economy	MON	AM	316
Poster Session	TUE	PM	Hall A
<b>Manufacturing Changes and Challenges Associated with Electric Vehicles</b>			
Manufacturing Changes and Challenges Associated with Electric Vehicles	TUE	AM	318
<b>Materials for CO2 Sequestration</b>			
Materials for CO2 Sequestration	WED	PM	317
<b>Porous Materials for Energy and Environment Applications</b>			
Porous Materials I	MON	PM	311
Porous Materials II	TUE	AM	311
Poster Session	TUE	PM	Hall A
<b>Sustainable Horizons: A Symposium on Collective Action for a Resilient Future</b>			
Sustainable Horizons	MON	PM	316
<b>Special Topics</b>			
<b>2024 Graduate Student Poster Contest</b>			
2024 Graduate Student Poster Contest	TUE	PM	Hall A
<b>2024 Undergraduate Student Poster Contest</b>			
2024 Undergraduate Student Poster Contest	TUE	PM	Hall A
<b>Honorary Symposium in Celebration of Prof. Michel Barsoum's 70th Birthday</b>			
Introductory Session	MON	AM	412
Progress in Mxenes I	MON	PM	412
Nanomaterials II / Progress in MAX Phases I	TUE	AM	412
Progress in MAX Phases II	TUE	PM	412
Poster Session	TUE	PM	Hall A
Progress in MAX Phases III	WED	AM	401
<b>IGNITE MSE: Thinking Outside the Lab</b>			
Poster Session	TUE	PM	Hall A
<b>Scientific Methods in Art, Archeology, and Art Conservation Science</b>			
Scientific Methods in Art, Archeology, and Art Conservation Science	WED	AM	413

Technical Meeting and Exhibition

# MS&T24

MATERIALS SCIENCE & TECHNOLOGY

## EXHIBITOR DIRECTORY

THE  **Advanced Materials**  
SHOW | USA

### HOW TO GET THE MOST FROM YOUR VISIT

You probably have your own special system for seeing a show. Whether you look for specific exhibitors first or start by looking for particular products or services, this directory will guide you. You will be able to find exactly what you need quickly and easily.

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# SHOW HOURS

## Sunday October 6, 2024

### Exhibitor Set-up - Custom Builds Only

8:00 a.m. – 5:00 p.m. | Hall A

## Monday, October 7, 2024

### Exhibitor Set-up - Custom Builds Only

8:00 a.m. – 5:00 p.m. | Hall A

### Exhibitor Set-up - All Exhibitors

9:00 a.m. – 5:00 p.m. | Hall A

### Exhibitor Badge/Lead Retrieval Collection

12:00 p.m. – 5:00 p.m. | Registration Area

### General Poster Installation

2:00 p.m. – 4:00 p.m. | Hall A

## Tuesday, October 8, 2024

### Early Exhibitor Access

8:00 a.m. – 9:00 a.m. | Hall A

### General Poster Installation

8:00 a.m. – 9:00 a.m.

### Exhibition Show Hours

9:00 a.m. – 6:00 p.m. | Hall A

### Technology Showcase Presentations

10:00 a.m. – 3:20 p.m. | Hall A

### MS&T Food Court - Ticketed Lunch

12:00 p.m. – 2:00 p.m.

### General Poster Viewing

2:00 p.m. – 5:00 p.m.

### Networking Reception hosted by The Graphene Council

4:30 p.m. – 6:00 p.m. | Networking Lounge

### Poster Presentations

5:00 p.m. – 6:00 p.m.

## Wednesday, October 9, 2024

### Early Exhibitor Access

8:00 a.m. – 9:00 a.m. | Hall A

### Exhibition Show Hours

9:00 a.m. – 3:00 p.m. | Hall A

### Graphene Application Sessions

10:00 a.m. – 3:00 p.m. | Hall A

### MS&T Food Court - Ticketed Lunch

12:00 p.m. – 2:00 p.m.

### General Poster Viewing

9:00 a.m. – 12:00 p.m.

### Exhibitor Move-Out

3:00 p.m. – 8:00 p.m. | Hall A

## Thursday, October 10, 2024

### Exhibitor Move Out: Custom Builds & Contractors Only

8:00 a.m. – 12:00 p.m.

**CONVENIENT INQUIRY SYSTEM:** Your conference badge allows you to enter the exhibition during show hours. When visiting exhibits, please present your name badge to the exhibitor's representative to request additional information about products and services.

**MESSAGE BOARD:** A bulletin board for messages will be located in the Registration area.

**PHOTOGRAPHY/VIDEO EQUIPMENT:** Please keep in mind that the exhibits are the property of the exhibiting companies. Photography and/or the recording of the exhibit hall or contents of any exhibitor booth are strictly prohibited at all times. Photography inside any exhibit space is limited to only the company that has contracted for the exhibit space or to an MS&T representative (or their contracted agent) with the consent of the exhibitor. Because there may have been some late changes in booth assignments, some exhibitors may have a different booth number than was shown on their invitations and advertising. Please check the MS&T24 app or onsite signage for the most-up-to-date listings.

## EXHIBITOR LIST

For the latest exhibitor information, please visit [www.advancedmaterialsshowusa.com/exhibitor-list/](http://www.advancedmaterialsshowusa.com/exhibitor-list/)

COMPANY NAME	#
Accerlated Materials	1023
Across International, LLC	819
AdValue Technology, LLC	628
Agilent Technologies	625
Alfred University	1011
Allegheny Performance Plastics	1012
Alpha Graphene Inc.	1018
Angstrom Scientific, Inc.	719
Applied Ceramics, Inc.	739
Applied Test Systems Inc.	837
Applied Thermal Control	1024
AtoMe Inc	730
AVN Corporation	724
Bettersize Inc.	617
Blue Halo	836
Boeckeler Instruments	737
Bruker	923
California Nanotechnologies	824
CAMECA	822
Carl Zeiss Microscopy, LLC	731
CellScale Biomaterials Testing	624
ceramiTec 2026	1131
Color Master	1129
COnovate Inc	732
Dragonfly	1025
Droplet Lab	909
Engi-Mat Co.	732
Enspire Leather	619
Freemelt	1128
FRITSCH Milling and Sizing, Inc.	1121

COMPANY NAME	#
Geo Corp, Inc.	813
Gleeble Systems	911
GrindoSonic	816
Hirox Digital Microscopes	832
ICDD	931
INMATEC Technologies GmbH	915
INSSTEK	929
Instec Inc.	1028
JEOL USA	1022
Kennametal Sintec	913
Keyence Corporation of America	1126
KLA-Tencor Corporation	825
Krell Institute	938
KS Analytical Systems	733
LECO Corporation	1017
Leica Microsystems Inc.	823
Linseis Inc.	1032
Lithoz America LLC	633
Microspray	717
MIPAR Image Analysis Software	918
MO-SCI, LLC	725
NABERTHERM Inc.	828
Nanovea	1031
nano tech 2025	1130
NETZSCH Instruments North America, LLC	925
Oxford Instruments	1010
Oxy-Gon Industries, Inc.	622
Pace Technologies Inc.	623
PLASMATERIALS Inc.	722

COMPANY NAME	#
Powder Processing and Technology	919
Powdertech International Corp.	1033
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Proto Manufacturing	723
Psylotech Inc.	718
Quantum Design	1029
Rigaku Americas	629
Semilab	1030
Sente Software Ltd. (JMatPro)	728
Springer Nature	1036
Stresstech	613
Sugino Corp	712
Surface Measurement Systems Ltd	1132
Sustainable Composites LLC	619
TESCAN	817
Tessvida Technologies Pte Ltd	936
The Graphene Council	933
Thermcraft, Inc.	1133
Thermo Fisher Scientific	917
Thermo-Calc Software	716
Thermtest	729
Thinky USA, Inc.	818
Total Materia AG	916
Uncountable, Inc.	630
Westmoreland Mechanical Testing & Research, Inc.	1123
Zircar Zirconia, Inc.	839

**October 8 - 9, 2024**  
David L. Lawrence Convention Center, Pittsburgh, PA, USA



## COMPANY DESCRIPTIONS

### **Accerlated Materials | Stand: 1023**

Our unique technology strategy integrates advanced microreactors, machine learning and automation to shift the paradigm of R&D. After years of validation, we've created a platform that reduces the cost of scale-up by 90%, whether its an inorganic nanoparticle or metal organic framework.

### **Across International LLC | Stand: 819**

Across International is an award-winning ISO 9001:2015 certified manufacturer with 30+ years' experience supplying laboratory equipment such as cold storage solutions, vacuum & forced air ovens, centrifuges, furnaces, pumps, cold traps, solvent evaporators, reactors, ball mills, and more to labs.

### **Advalue Technology LLC | Stand: 628**

AdValue Technology is a leading supplier of high purity materials for advanced material research and production. Main product lines include Diamond, Alumina, Fused Quartz, Sapphire, Boron Nitride, Aluminum Nitride, Zirconia, Transparent Ceramics and more.

### **Agilent Technologies | Stand: 625**

Agilent Technologies leads the industry with robust, reliable instruments that provide the ability to analyze, confirm and quantify substances of interest. Our workflow solutions enable you to maintain stringent practices from sample preparation, through analysis, to final report.

### **Alfred University | Stand: 1011**

Alfred University, through its Center for Advanced Ceramic Technology (CACT), is an international leader in applied research focused on technical ceramics and glass. Whether it's through short-term analytical testing or long-term research & development, CACT supports industrial projects that lower development costs and helps ensure faster time to market.

### **Allegheny Performance Plastics | Stand: 1012**

Allegheny Performance Plastics is the "go to" high-end injection molder, manufacturer and global supplier of technically advanced functional parts and assemblies for aerospace, space, defense, medical and e-mobility industries.

### **Alpha Graphene Inc | Stand: 1018**

Established in 2017, Alpha Graphene Inc. specializes in developing and producing high-quality, large-area CVD graphene. Our innovative vacuum transfer technology ensures graphene is free from physical damage and chemical doping, ideal for next-generation sensors and electronic devices.

### **Angstrom Scientific, Inc. | Stand: 719**

Angstrom Scientific represents manufacturers in material characterization & analysis like Hitachi Tabletop SEMs, Imina Nano-probing systems, Point Electronics EBIC/EBAC, Leica Sample equipment, NenoVision In-Situ AFM, Alemnis In-Situ Nano-Indenters, EMSIS TEM Cameras, Laser Thermal measure tools, Advent Diamond Xray Beam Intensity & Imaging Monitor

### **Applied Ceramics, Inc. | Stand: 739**

Applied Ceramics, Inc. is a world-class technology and manufacturing company that creates value for its customers. By focusing on its customer's goals, Applied Ceramics create value through its ceramic, catalyst, tooling, sourcing, manufacturing and research and development expertise.

### **Applied Test Systems Inc | Stand: 837**

Applied Test Systems (ATS) is a leading manufacturer of materials testing and process heating equipment with over 50 years of industry experience.

### **Applied Thermal Control | Stand: 1024**

ATC delivers precision cooling solutions including recirculating chillers, heat exchangers, and airblast coolers. With 40+ years of expertise, ATC supports industries from scientific research to digital printing with reliable, custom-engineered temperature control.

### **AtoMe Inc | Stand: 730**

AtoMe is a producer of advanced metals expanding the quality and durability of additively manufactured parts. Based on research by its founders at MIT to design materials for fusion power, AtoMe develops custom, nanomaterial-enhanced powders to raise the operational limits of best-in-class alloys.



### **AVN Corporation | Stand: 724**

CDMO experienced in process development, scale-up, and custom manufacturing for clients in the chemical or green technology industries who need a faster route to a market-ready process or product.

### **Bettersize Inc. | Stand: 617**

Bettersize Inc. manufactures analytical tools for precise particle size, shape, zeta potential, and powder analysis. Trusted by over 17,000 businesses, we support scientists and engineers in optimizing research and production with strict quality control and exceptional customer service.

### **Blue Halo | Stand: 836**

Robo-Met systems enable you to create more time for discovery, data analysis and characterization by eliminating the drudgery of the polishing station, and automating microscopy. Our Robo-Met system allows you to automate and upgrade your materialography process.

### **Boeckeler Instruments | Stand: 737**

Boeckeler Instruments, Inc. is a privately-owned company that engineers sample preparation equipment for nanoscale research. Our solutions are employed in both life sciences and materials research, with special emphasis in sample preparation for 3D electron microscopy.

### **Bruker | Stand: 923**

Bruker offers complete testing, analyzing, and measuring solutions for quantitative nanoscale-to-microscale materials characterization, flexible imaging and characterization of surfaces, and elemental analysis for production and quality control of metals. Visit us in booth 508 to speak with an expert and learn more!

### **California Nanotechnologies | Stand: 824**

California Nanotechnologies Inc, (Cal Nano) is North America's premiere commercial FAST/SPS and Cryo-milling experts. Cal Nano has extensive experience in dozens of R&D and pilot production projects with Industrial partners, National Labs, and Universities.

### **CAMECA | Stand: 822**

CAMECA is the world-leading scientific provider of instrumentation for the international research community and in-fab / near-fab metrology solutions for the semiconductor manufacturing industry.

### **Carl Zeiss Microscopy, LLC | Stand: 731**

Carl Zeiss Microscopy is the world's only one-stop manufacturer of light, electron, X-ray and ion microscope systems and offers solutions for correlative microscopy. The portfolio comprises of products and services for life sciences, materials and industrial research, as well as education and clinical practice.

### **CellScale Biomaterials Testing | Stand: 624**

CellScale Biomaterials Testing manufactures precision materials characterization devices including systems for tension, compression, bending, torsion, shear, biaxial, and micromechanical testing. We specialize in systems for small, soft materials emphasizing biomedical applications.

### **ceramiTec 2026 | Stand: 1131**

ceramiTec is the meeting point for the international ceramics industry: Every branch, every market leader, every decision-maker, and the entire value chain is represented here. And it is this that makes ceramiTec the leading international trade fair within the industry.

### **Color Master | Stand: 1129**

For nearly 35 years Color Master has operated with a commitment to serving the plastics industry with quality custom color concentrates and PVC compounds at the lowest possible price with the fastest turnaround times.

### **COnovate Inc | Stand: 732**

A Revolutionary Material for Evolutionary Solutions Commercializing a novel carbon-based nanomaterial that is the world's only form of solid carbon monoxide (CO)—offering cost-competitive scalability and the opportunity for seamless adoption as a battery anode material and ultimately many other applications.

### **Dragonfly | Stand: 1025**

From straightforward visualization to AI-based segmentation and quantification – Dragonfly delivers the features you need for quick meaningful results. Get quantitative answers for your most demanding 2D, 3D and 4D imaging studies, including data from correlative and hyperspectral imaging systems, X-ray, SEM, FIB-SEM, ion beam, confocal microscopy and many more.

### **Droplet Lab | Stand: 909**

Droplet Lab revolutionizes surface science research and education with innovative, affordable instruments for contact angle and surface tension measurements. Trusted by Fortune 500 companies and Ivy League universities, Droplet Lab simplifies and democratizes surface science for all.

### **Engi-Mat Co. | Stand: 732**

Engi-Mat Co. is an ISO 9001 certified developer and manufacturer of nano-engineered materials with a 30-year history of technical innovation. Using our proprietary Nanomiser® systems we produce nanomaterials in volume for diverse applications including optical ceramics, batteries, and many others.

### **Enspire Leather | Stand: 619**

SUSTAINABILITY AS A SERVICE- Enspire Leather has developed proprietary technology to upcycle industrial and post-consumer finished leather scrap into a new leather material that can be refinished and repurposed in most applications as new leather.

### **Freemelt | Stand: 1128**

AM OEM- Manufacturer of 6kW E-PBF, Open Platform Electron Beam Powder Bed Fusion Additive Manufacturing Systems from Sweden, home of E-PBF/EBM technology. Print dense tungsten, molybdenum, titanium & pure copper.

### **Fritsch Milling and Sizing, Inc. | Stand: 1121**

International German manufacturer of lab instruments. Mills, grinders, & analyzers for particle size reduction, sample prep, materials science, product development, & particle analysis for process monitoring & critical applications in QA, QC, R&D. Particle size from nano up.

### **Geo Corp, Inc. | Stand: 813**

Manufacturer of thermocouples, thermocouple wire, connectors and offering Pyrometry Management Software. When combining all of these you can have the ultimate package of Quality Control.

### **Gleeble Systems | Stand: 911**

Gleeble systems are cutting-edge testing machines used to simulate and analyze high-temperature processes and materials with incredible precision. They help researchers and engineers understand how materials behave under extreme conditions to improve manufacturing techniques and material performance.

### **GrindoSonic | Stand: 816**

Comprehensive material characterization products based on Impulse Excitation Technique (IET), enabling you to understand mechanical properties of materials, their evolution over time. Whether looking to ensure part consistency, evaluate material evolution, or explore mechanical properties.

### **Hirox Digital Microscopes | Stand: 832**

Hirox is the pioneer of 3D Digital Microscope System. Our digital microscope system is a versatile tool for measurement, recording, and see things “as they truly are”. Hirox’s high-quality optical and lighting designs allow a magnification range of 0x-10,000x, live focus, and real-time 2D/3D tiling with an automated XY stage.

### **ICDD | Stand: 931**

For over 80 years, our mission has focused on meeting the needs of the scientific community through the publication of the Powder Diffraction File™ (PDF®) and by providing forums for the exchange of ideas and information. Come see the Next Level Database-PDF-5+ or a demo of JADE Analysis Software!

### **INMATEC Technologies GmbH | Stand: 915**

INMATEC Technologies GmbH is specialised in the manufacture of high-utility, customised feedstocks. We develop and produce ready-to-process granulates that allow our customers to make injection-moulded ceramic components.

### **Insstek | Stand: 929**

InssTek develops and manufactures metal 3D printers using its original DMT (Direct Metal Tooling) technology. InssTek specializes in 'Multi-Material Manufacturing' and has developed the MX-Lab machine for material research and alloying. InssTek also provides 3D printing services, including printing, remodeling, and repair applications." develops and manufactures metal 3D printers with InssTek's original DMT(Direct Metal Tooling) technology. InssTek also provides printing, remodelling, and repair services for 3D printing applications.

### **Instec Inc. | Stand: 1028**

Instec manufactures precision temperature-controlled scientific instruments for optical measurements. Applications include electrical probing, biological research, material science, and more. Instec offers many standard products for use with all optical systems, as well as many custom applications.

### **JEOL USA | Stand: 1022**

JEOL offers a wide range of microscopy solutions for SEM, TEM, and sample preparation. JEOL SEMs, from benchtop to large chamber and ultrahigh resolution FESEMs, feature live EDS, particle analysis, and more. JEOL TEMS, from multipurpose LaB6 to advanced atomic resolution, are renowned for advanced research in materials science.

### **Kennametal Sintec | Stand: 913**

Transforming how everyday life is built, Kennametal provides high performance technical ceramic solutions. Matching our advanced material solutions and technologies to your applications, our experts listen to your needs to deliver better, efficient and reliable products.

### **Keyence Corporation of America | Stand: 1126**

KEYENCE's microscope and measurement systems provide high-resolution imaging, ISO-certified roughness, and 2D/3D measurements. We offer on-site demos, sample testing, training, and same-day shipping!

### **KLA-Tencor Corporation | Stand: 825**

KLA develops industry-leading equipment and services that enable innovation throughout the electronics industry. We provide advanced process control and process-enabling solutions for manufacturing wafers and reticles, integrated circuits, packaging, printed circuit boards and flat panel displays.

### **Krell Institute | Stand: 938**

Krell Institute is seeking applicants for a trio of federally funded doctoral fellowships in STEM, each offering up to four years of support. Benefits include payment of tuition and fees, a \$45K annual stipend, DOE laboratory research experience, and a yearly meeting of the fellowship community.

### **KS Analytical Systems | Stand: 733**

KS Analytical Systems is a premier provider of advanced analytical solutions, specializing in X-ray diffraction, X-ray fluorescence, and X-ray microscopy technologies. We offer both refurbished and new instrumentation focusing on accuracy, efficiency, and outstanding customer support.

### **LECO Corporation | Stand: 1017**

Since 1936, LECO has been providing comprehensive solutions that keep labs running at their best. We provide instrumentation for elemental and thermal analysis, metallography, and mass spectrometry—and have a team that will work with you to help you get the most out of your equipment.

### **Leica Microsystems Inc. | Stand: 823**

Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures.

### **Linseis Inc. | Stand: 1032**

Linseis provides thermal analysis instrumentation for materials development and product reliability. Our range includes dilatometers for thermal expansion with up to three furnaces for increased throughput, rapid induction quenching and deformation dilatometers, and thin film analyzers.

### **Lithoz America LLC | Stand: 633**

Lithoz is the system provider for additive manufacturing (3-D-printing) of high-performance ceramics. Lithoz covers the whole process chain—from development of the machine to the materials and up to the application.

### **Microspray | Stand: 717**

MicroSpray, for thin films and aerosols. Non-clogging ultrasonic vibration gently atomizes low viscosity liquids for coating stents, solar cell, blood collection tubes, pyrolyzing or spray drying ceramics. No flow is too low, no film too thin!

### **MIPAR Image Analysis Software | Stand: 918**

MIPAR is a world-leading algorithm development and image analysis software company. We specialize in extracting measurements from complex images. From materials and life sciences to aerospace and manufacturing solutions, our flexible solutions can assist a variety of real-world applications.

### **MO-SCI, LLC | Stand: 725**

Mo-Sci is a leading provider of specialty glasses catering to a wide range of applications from aerospace to healthcare. Our exceptional strength lies in collaborating with clients across diverse industries to develop tailored glass solutions, making us a valuable and reliable resource

### **NABERTHERM Inc. | Stand: 828**

Nabertherm, with over 500 employees worldwide, has been developing and producing industrial furnaces for over 70 years. As a manufacturer, Nabertherm offers a very wide and deep range of furnaces. 150,000 satisfied customers in more than 100 countries offer proof of our commitment to excellence.

### **Nanovea | Stand: 1031**

NANOVEA's instruments can be found in renowned educational and industrial organizations around the world.

### **nano tech 2025 | Stand: 1130**

nano tech is a place where innovative materials and next-generation devices are gathered to explore the implementation of future technologies in society based on nanotechnology, an important common base technology for research and development. 29Jan to 31Jan. 2025, Tokyo Japan

### **NETZSCH Instruments North America, LLC | Stand: 925**

NETZSCH offers a complete high-precision instrument line for thermal analysis, calorimeter and thermophysical properties measurement, rheology and fire testing, as well as world class commercial testing services. Their instrumentation is employed for research and quality control in the polymer sector, chemical industry, areas of inorganic/building materials, and environmental analysis.

### **Oxford Instruments | Stand: 1010**

Oxford Instruments materials analysis solutions enable you to accurately analyze and characterize materials down to the nanoscale level more rapidly, by combining superior detection and analysis instruments with software that interpret the resulting data in the context of your research.

### **Oxy-Gon Industries, Inc. | Stand: 622**

35-year-old Oxy-Gon offers a wide range of furnaces for, Ceramic Firing, Annealing, Brazing, Hot Pressing and more. Oxy-Gon furnaces have temperatures up to 3000°C (5400°F) and controlled atmospheres, rough to ultra-high vacuum, inert gas, nitrogen, hydrogen or reducing gas. Oxy-Gon is "Degrees Ahead in Quality" since 1988.

### **Pace Technologies Inc. | Stand: 623**

We pride ourselves on offering an extensive array of equipment and consumables tailored to meet the exacting needs of materials testing. Our meticulously curated selection encompasses top-of-the-line cutting, polishing, and grinding machines, alongside a diverse range of microscopes and precision instruments essential for accurate measurements.

### **PLASMATERIALS Inc. | Stand: 722**

PLASMATERIALS, Inc. established in 1987 is a leader in providing high purity materials for all types of thin film applications. Plasmaterials has become a worldwide manufacturer and distributor of PVD materials for R&D, pilot production and full-scale production.

### **Powder Processing and Technology | Stand: 919**

Powder Processing Technology provides volume powder production, spray drying, custom process development, calcining/sintering, spray drying, and blending/pelletizing that ensures your industry competitiveness.

### **Powdertech International Corp. | Stand: 1033**

Powdertech develops and manufactures specialty ferrite powders. We leverage our process technology and expertise to customize our products for a wide range of applications. Example applications include shielding, sensors, inductors, additive manufacturing, magnetic fluids, and brake pads.

### **Princeton Scientific Corporation | Stand: 830**

Princeton Scientific is a leading global supplier of pure element crystals and substrates, as well as common alloys to research and industry.

### **Proto Manufacturing | Stand: 723**

Proto is a leading x-ray diffraction (XRD) equipment manufacturer specializing in powder XRD, single-crystal XRD, Laue orientation, and residual stress characterization. Proto can also create custom MetalJet x-ray systems. Our laboratories in the US and Canada provide efficient measurement services.

### **Psylotech Inc. | Stand: 718**

Evanston, Illinois based Psylotech has been designing and building precision multi-scale micro-mechanical testing systems for the global stage.

### **Quantum Design | Stand: 1029**

Quantum Design manufactures automated material characterization systems including: PPMS DynaCool Measurement System, MPMS3 SQUID Magnetometer, 7-tesla OptiCool system for magneto-optical experiments and the new FusionScope, a seamless combination of powerful microscopy techniques: SEM, AFM and EDS. Visit with Quantum Design to learn more.

### **Rigaku Americas | Stand: 629**

Rigaku Corporation, a leading manufacturer & supplier of analytical equipment specializing in X-ray, Electron, Infra-red, and Thermal technologies. X-ray technologies embrace primary X-ray applications of X-ray Diffraction, Single Crystal Analysis, Small Angle X-ray Scattering, and X-ray Fluorescence and X-ray imaging, including 3D X-ray microscopy.

### **Semilab | Stand: 1030**

SEMILAB provides state-of-the-art metrology solutions for semiconductor device manufacturers, both in-line and R&D segments, and is a strategic metrology supplier of leading wafer manufacturers, IC device makers in the More-than-Moore market segment, solar and display industries worldwide.

### **Sente Software Ltd. (JMatPro) | Stand: 728**

With a proven track record for innovation, we continue to develop new scientific capabilities in JMatPro, a simulation software for calculating a wide range of material properties for multi-component alloys used in industrial practice. All of our products combine realistic physical models, user-friendly interfaces and incorporate a thorough validation process.

### **Springer Nature | Stand: 1036**

Springer Nature publishes many of the world's most prestigious materials science and engineering journals and books, including those by TMS, The Minerals, Metals & Materials Society. Our titles contain the work of the world's most distinguished researchers. Stop by to check out our titles!

### **Stresstech | Stand: 613**

Stresstech is a global leader in non-destructive testing solutions. Specializing in measuring residual stresses, detecting grinding burn, and verifying heat treatment processes. Our innovative technology & expertise help manufacturers ensure product quality & reliability across various industries.

### **Sugino Corp | Stand: 712**

Sugino Machine Limited manufactures innovative, precision equipment for wet jet milling, high-pressure cleaning, deburring, machining, drilling and tapping, burnishing, waterjet cutting, and more.

### **Surface Measurement Systems Ltd | Stand: 1132**

As the world leaders in sorption science, Surface Measurement Systems develops and engineer innovative instrumentation for the advanced physico-chemical characterization of complex solids.

### **Sustainable Composites LLC | Stand: 619**

Rooted in Pennsylvania's Lancaster County, we're focused on developing new technologies to maximize the use of waste and material utilization, all while using environmentally friendly processing. Our unique process of recycling scrap leather helps create circularity and provides a sustainable solution for many companies to integrate into their supply chains.

### **Tescan | Stand: 817**

TESCAN is a trusted source of innovative and disruptive technologies for science and industries such as SEM, FIB-SEM, 4D-STEM, and micro-CT systems.

### **Tessvida Technologies Pte Ltd | Stand: 936**

A company specialized in products made from advanced ceramics and other materials. Our products range from medical, aerospace, to semiconductors etc.

### **The Graphene Council | Stand: 933**

The Graphene Council is the best source of information and intelligence on graphene production and applications for producers, users, R&D and application development professionals.

### **Thermcraft, Inc. | Stand: 1133**

We're a global leader in high-quality thermal processing equipment, offering custom-designed solutions including laboratory and production furnaces, vacuum formed ceramic fiber heaters, cast heaters, heater coils, air heaters, ovens, kilns, and diffusion heaters to meet all your thermal needs.

### **Thermo Fisher Scientific | Stand: 917**

Thermo Fisher Scientific Inc. is the world leader in serving science, with annual revenue of approximately \$40 billion. Our Mission is to enable our customers to make the world healthier, cleaner and safer.

### **Thermo-Calc Software | Stand: 716**

What do you do when the materials data you need doesn't exist? A global leader in software for computational materials engineering, Thermo-Calc empowers metallurgists and process engineers to: Calculate thermodynamic and phase-based properties as a function of chemistry, temperature, and time.

### **Thermtest | Stand: 729**

Thermtest designs and manufactures instruments with intelligence for accurate testing of thermophysical properties. Our unique combination of lab equipment, portable meters and testing services positions us as your apex provider of thermal conductivity services.

### **Thinky USA, Inc. | Stand: 818**

THINKY USA's is a direct subsidiary of THINKY Corp. Our planetary centrifugal mixers disperse and degass highly viscous materials in minutes. THINKY offers both atmospheric and vacuum units. Save time, labor and money with THINKY technology.

### **Total Materia AG | Stand: 916**

Total Materia helps companies enrich and connect their internal material information to several processes and systems around the organization. Supported by a library of property data on over 700,000 material designations, compliance and sustainability calculations, and machine learning capabilities.

### **Uncountable, Inc. | Stand: 630**

Uncountable is an enterprise-class cloud platform for modern global R&D organizations. Our solution modernizes R&D workflows from siloed data sets and turns them into an integrated R&D knowledge base. Unearth new learnings with visualization tools and add predictive capabilities to your R&D toolset.

### **Westmoreland Mechanical Testing & Research, Inc. | Stand: 1123**

Materials testing for additive manufacturing, aerospace, automotive, composites, medical & power generation industries. Over 5 decades of custom, high volume, quick materials testing experience. Fully integrated, state-of-the-art facilities & labs are A2Ia ISO 17025 accredited & NADCAP accredited.

### **Zircar Zirconia, Inc. | Stand: 839**

Zircar Zirconia manufactures rigid fibrous ceramic boards and flexible textiles for insulation, setters, gaskets, battery separators, and electrolyzer membranes. Our chemistries include YSZ, pure zirconia, alumina, ceria and yttria. These products stand up to the hottest, most corrosive environments.

## MS&T ANTI-HARASSMENT POLICIES

The Material Science and Technology Conference (MS&T) is organized by a partnership of three leading materials science-related societies: ACerS, AIST, and TMS.

All three partner societies are committed to ensuring that all MS&T activities are free from discrimination, harassment, and/or retaliation of any form. The MS&T partnership does not tolerate harassment in any form of anyone attending an MS&T event.

Each Society has its Anti-Harassment/Code of Conduct policies posted on its website.

### What to Do

Anyone who witnesses or is subject to any form of harassment has two options:

1. Immediately notify any MS&T staff members located at the MS&T registration area, information booths, or at one of the Society lounges. These MS&T staff members will immediately contact the MS&T leadership who will respond to you as soon as possible.
2. If you are a member of ACerS, AIST, or TMS, please consult the above-referenced policies to determine to whom and how best to report an incident.

The MS&T partnership respects the organizational sovereignty and decision-making practices employed by each partner. Therefore, each partner, based on employment of its own internal due process, has the right to deny or revoke participation in the MS&T event and/or any of its activities by any individual or business.

## Advancing Materials to New Levels

Every two seconds an aircraft powered by GE Aerospace technology takes flight. This impressive reality is rooted in GE's 100+ year legacy of innovation and embracing the unconventional; a history that started with Thomas Edison and continues today through GE Aerospace's current generation of materials and manufacturing researchers and engineers.

Our team is building on GE's rich legacy of manufacturing excellence and technical leadership in metals, polymers, ceramics, and composites to revolutionize design, enhance quality, and enable faster, lower cost product development—that ultimately become the physical pieces of GE Aerospace's innovative technologies.

At GE Aerospace Research, we're advancing materials to new levels of durability and performance, delivering differentiated solutions for engine services to better serve our customers around the globe. **Are you ready to partner with us to define the future of flight?**



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