

# JOM THE MAGAZINE

MARCH 2025

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News and insights about TMS, its members, and the professions it serves

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## MEET THE 2025 TMS HONORS & AWARDS RECIPIENTS



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## ABOUT THE COVER



This month's cover features a sampling of the 2025 TMS Award recipients who are featured in this issue of the magazine. Included here are the seven members who make up the TMS Fellows Class of 2025 (the highest honor the Society offers), as well as several of this year's Brimacombe Medalists (recognizing mid-career achievement) and division award recipients. You can find a full listing of the 2025 award recipients in the pair of articles beginning on page 10. Cover designed by Cheryl M. Geier, Senior Graphic Designer.



### Access Technical Journal Articles

TMS members receive free electronic access to the full library of TMS journals, including *JOM*. Technical articles published in *JOM: The Journal* are available on the Springer website. TMS members should log in at [www.tms.org/Journals](http://www.tms.org/Journals) to ensure free access.

### About *JOM: The Magazine*:

This print publication is excerpted from the publication of record, *JOM*, which includes both The Magazine and The Journal sections. *JOM: The Magazine* includes news and insights about TMS, its members, and the professions it serves. To access the publication of record, visit [www.tms.org/JOM](http://www.tms.org/JOM).

### About TMS:

The Minerals, Metals & Materials Society (TMS) is a professional organization that encompasses the entire range of materials science and engineering, from minerals processing and primary metals production to basic research and the advanced applications of materials. Learn more at [www.tms.org](http://www.tms.org).

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# IN THE FINAL ANALYSIS

*"According to Darwin's Origin of Species, it is not the most intellectual of the species that survives; it is not the strongest that survives; but the species that survives is the one that is able best to adapt and adjust to the changing environment in which it finds itself."*

—Leon C. Megginson, "Lessons from Europe for American Business," Southwestern Social Science Quarterly

For the rank-and-file TMS member, the idea of being responsive to change needs neither introduction nor advocacy. Certainly, the pursuit of change will infuse TMS2025 in March as roughly 5,000 scientists and engineers convene within the MGM Grand in Las Vegas. The precursors for change will be found within every session room, throughout the exhibition hall, and in most hallway conversations.

Unsurprisingly, embracing change is also standard operating procedure for those who manage the TMS enterprise. It is not just an in-house philosophy. TMS frequently collaborates with other professional societies to engage diverse and cross-disciplinary perspectives, to pool resources, and to amplify outcomes.

For example: Empowered with a grant from the United Engineering Foundation and led by the American Institute of Chemical Engineers as principal investigator, TMS recently worked with the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the society Black Women in Science and Engineering. The purpose? To identify and prioritize high-impact opportunities for professional engineering societies on the ethical use of generative artificial intelligence toward creating substantial value to members and the engineering community. The work began with a scan of AI-related developments in nonprofit associations such as TMS. This enabled the working group to identify and prioritize five opportunities, with the resulting report advocating for the following:

1. Establishing a **learning exchange** for organizations to share AI-related guidelines, practices, and policies.
2. Creating a shared **large language model "sandbox"** so that associations can experiment using collective content, using it to identify collaborative product opportunities and encourage AI innovation.
3. Developing a **roadmap for the adoption of generative AI** within engineering disciplines, thereby helping associations anticipate and shape future trends.
4. Collaborating across societies to **create AI standards**, particularly for cross-disciplinary use and expediting the development of industry-wide guidelines and benchmarks.
5. Devising **new AI educational programs** for the engineering community where generative AI is changing daily how engineers work.

To accomplish these goals, professional societies are encouraged to form alliances to pool resources and expertise. My take: The ideas are grand. Implementation will require uncommon levels of collaboration. That would be change, and change can be a very good thing.

For TMS's part, staff has been looking hard at AI for almost a year, with a staff "tiger team" being commissioned to consider two aspects of AI:

1. **How do we best deploy these tools to staff?** Addressing this question has already led us to develop a staff policy on the use of AI, to inventory dozens of potential tools, and to create a staff team to coach users on the tools.
2. **How do we best empower TMS members and stakeholders with TMS-centric AI tools?** As I write, we are soon to contract a third-party to provide the backbone of a deliverable. Stay tuned.

Why do I tell you these things? Because I'd like you to know that, like the average TMS member, headquarters staff embraces a present and future where innovation and agility define success. Change is not a threat but an exciting reality.



James J. Robinson  
Executive Director



James Robinson

*"TMS frequently collaborates with other professional societies to engage diverse and cross-disciplinary perspectives, to pool resources, and to amplify outcomes."*

Find peer-reviewed technical articles covering the full range of minerals, metals, and materials science and engineering in the March issue of *JOM: The Journal*. Each issue features several technical topics presenting a series of related articles compiled by guest editors. Below is a sample of articles that will appear in the March issue, based on information available at press time. TMS members can log in to [www.tms.org/Journals](http://www.tms.org/Journals) for full access to technical articles from *JOM: The Journal* and additional TMS journals. For the most up-to-date article listing, visit [www.tms.org/JOM](http://www.tms.org/JOM).

## // MARCH 2025

### Advances in Surface Engineering

**Editors:** Tushar Borkar, Cleveland State University; Bharat Jasthi, South Dakota School of Mines and Technology; Arif Mubarak, PPG

"Low-Temperature Carbonization of Phosphorus-Doped Nanocellulose for Carbon Nanofiber Film Fabrication," **Suman**, et al.

"A Review on High Entropy Alloys Coatings Fabricated by Electrodeposition: The Correlation between Composition, Properties and Processing Parameters," **Olga Nechvoglod**, et al.

"Study on Machining Mechanism and Wear Mechanism of Composite Coated Tools on CoCrFeNiAl<sub>0.6</sub> High Entropy Alloy at High Speed," **Ping Zhang**, et al.

### Control and Modification of Structure in Aluminum Alloys

**Editor:** Dmitry Eskin, Brunel University of London

"On the Improved Mechanical Properties and Corrosion Resistance in LM6 Alloy Through Eutectic Modification," **Pawan Bohane**, et al.

"Refill Friction Stir Spot Welding of a Graphene-Reinforced AA 6061 Aluminum Alloy," **Tong Wu**, et al.

"Study on Microstructure Evolution and Heat Treatment Process of Al-Si-Cu-Mg Cast Alloys Under Two-Step Solution Treatment," **Yaqiang Tian**, et al.

"Comparing the Properties of Metastable Quasicrystal-Forming Al<sub>95</sub>Fe<sub>2</sub>Cr<sub>2</sub>Ti<sub>1</sub> Alloy Prepared by Uniaxial Hot Compaction and Powder Bed Fusion-Laser Beam," **Aylanna P. M. de Araujo**, et al.

"On the Interactions Between -Al<sub>2</sub>O<sub>3</sub> Nanoparticles and Primary or Eutectic Al<sub>2</sub>Cu in Hypereutectic Al-Cu Alloy," **Jingyi Hu**, et al.

"Synergistic Effects of Pre-charged Hydrogen and Tensile Stress on the Stress Corrosion Cracking of 2024-T351 Aluminum Alloy," **Qiyao He**, et al.

"Effect of TiB<sub>2</sub> on the Microstructure and Mechanical Properties of TiB<sub>2</sub>/Al-5Cu Matrix Composites," **Jingchuan Tang**, et al.

"Effects of Si Solution on Stability of Early 3d Transition-Metal Tri-Aluminides, Al<sub>3</sub>T (T = Sc, Ti and V)," **C.M. Fang**, et al.

"Microstructure and Properties of a Laser-Surface-Modified Mg-RE Alloys with Al-Si Powder," **Jiamin Li**, et al.

"Microstructural Characterization of QC-Forming Al-Mn-Based Alloy Using Machine Learning Software," **Adam Zaky**, et al.

"Influence of Mn Addition on the Evolution of Precipitates in Al-Cu Alloys," **Xiongbo Dong**, et al.

"Investigation of an L-Shaped Cross-Sectioned AA6061 Aluminum Alloy Ring via Extrusion and Self-Bending Integral Processing Technology," **Yuanchun Huang**, et al.

"Quenching Sensitivity of 2195 Aluminum-Copper-Lithium Alloy Studied Using TTP Diagrams and Immersion End-Quenching Experiments," **Chengbo Li**, et al.

"Investigation on Reduced Aging Time and Enhanced Tensile Properties of Al-Mg-Si Sheets by Asymmetric Cryorolling," **Nannan Shi**, et al.



"Influence of the Microstructure and Mechanical Properties of a Hypoeutectic Al-10Mg<sub>2</sub>Si In Situ Composite with Yttrium Addition," **Fachang Zhao**, et al.

"Effect of Vanadium/Boron Ratio on the Microstructure of Al-V-B Master Alloy and Their Grain Refining of Alloy A356.2," **Yulan Zhou**, et al.

"Microstructural Evolution and Kinetics of 7075 Al Alloy During Homogenization Treatment," **Yang Ding**, et al.

"Effects of Heat Treatment on Mechanical Properties of Selective Laser Melted AlSi10Mg Alloy," **Haozhe Wang**, et al.

"Enhancing Microstructural Evolution and Mechanical Strength in Recycled AlSi7Mg Alloys Through Heat Treatment," **Krystian Zyguta**, et al.

"Multi-scale Characterization of Supersaturated and Intermetallic Nanoscale Phases in Alloys Produced by High-Pressure Torsion Processing of Al and Mg Sheets," **Yun-Hsuan Wu**, et al.

"Modified Mechanical Anisotropy and Formability of 7B52 Laminated Aluminum Alloy Through Changing Rolling Temperature," **Guochuan Tang**

"Superhigh Yield Ratio and Considerable Plasticity in Powder Metallurgy Al-Zn-Mg-Cu Alloy Prepared with Elemental Powder," **Pengfei Zhang**, et al.

## Irradiation Testing: Facilities, Capabilities, and Experiment Designs

**Editors:** **Walter Luscher**, Pacific Northwest National Laboratory; **David Senor**, Pacific Northwest National Laboratory

"Irradiation Testing: Facilities, Capabilities, and Experiment Designs," **Walter Luscher**, et al.

"Development of Instrumented Fuel Pin Testing in the BR2 Reactor for the P2M Project," **Rik-Wouter Bosch**, et al.

"Westinghouse Churchill Hot Cell Facility and Capabilities," **Caleb Clement**, et al.

"Design of Mini-Plate-1 Irradiation Test for Qualification of High-Density, Low-Enriched U-10Mo Monolithic Fuel," **Seth M. Kilby**, et al.

"Laboratory-Based Micro-X-ray Computed Tomography of Energy Materials at Idaho National Laboratory," **William Chuirazzi**, et al.

"Perspectives on Tailoring Neutron Energy Spectra in Material Test Reactors," **Nicolas Woolstenhulme**, et al.

### Contribute Your Work

View the *JOM* Editorial Calendar to see upcoming topics and learn how to submit your own article for *JOM: The Journal*. Visit [www.tms.org/EditorialCalendar](http://www.tms.org/EditorialCalendar).

### View More Technical Articles

*JOM* regularly publishes additional articles that fit within the scope of the journal, but not within the scope of a particular technical topic. Read these in the "Technical Articles" section of *JOM* on Springer.



# TMS MEMBER NEWS

## Share the Good News!

Contact Kelly Zappas, *JOM: The Magazine* editor, at [kzappas@tms.org](mailto:kzappas@tms.org) to share your professional accomplishments. Please note that only news submitted by current TMS members will be considered.

## TMS Members Honored by ACerS, AIST

Congratulations are in order for a number of TMS members honored by two materials-related societies that, along with TMS, organize the Materials Science & Technology (MS&T) Technical Meeting and Exhibition: the American Ceramic Society (ACerS) and the Association for Iron & Steel Technology (AIST). Both ACerS and AIST will again join TMS's Fall Meeting at MS&T25, scheduled for September 28–October 1, 2025, in Columbus, Ohio. Abstracts for this meeting are due May 1, 2025. For more information, visit [www.matscitech.org/MST25](http://www.matscitech.org/MST25).



*The ACerS awards were presented at its 126th Annual Meeting, held in conjunction with MS&T24 in Pittsburgh, Pennsylvania. The Annual Honors and Awards Banquet took place on Monday, October 7, 2024.*

### 2024 Distinguished Life Member

**Zuhair A. Munir**, University of California,  
TMS member since 1964

### Fellow Award

**Navin Manjooran**, Solve, TMS member since 2004

### W. David Kingery Award

**Katherine T. Faber**, California Institute of Technology,  
TMS member since 2001

### Du-Co Ceramics Young Professional Award and European Ceramic Society (ECerS) Joint Young Professional Award

**Theresa (Tessa) Davey**, Nuclear Futures Institute,  
Bangor University, TMS member since 2020

### Rishi Raj Medal for Innovation and Commercialization

**Sanjay Sampath**, Stony Brook University and Center for  
Thermal Spray Research, TMS member since 1998

### David W. Richerson Educational Outreach Award

**Elizabeth Tsekrekas**, Savannah River National Laboratory,  
Material Advantage (MA) and TMS member since 2023

### 2024 Alfred R. Cooper Young Scholar Award

**Patrick E. Lynch**, Alfred University, MA and TMS member  
since 2023

### 2024 Alfred R. Cooper Young Scholar Award Runner-Up

**Julianne Chen**, The Pennsylvania State University,  
MA and TMS member since 2023



*The AIST awards were presented at the Institute's annual meeting, AISTech 2024, in Columbus, Ohio. The President's Awards Breakfast program took place on May 7, 2024.*

### Distinguished Member & Fellow Award

**P. Chris Pistorius**, Carnegie Mellon University  
and the Center for Iron and Steelmaking  
Research, TMS member since 2011

### Josef S. Kapitan Award

**Samuel Nielson**, Purdue University Northwest,  
MA/TMS member since 2019

### Ladle and Secondary Refining Best Paper Award

**Jose Roberto de Oliveira**, Federal Institute of  
Espirito Santo, TMS member since 2024

**Raphael Mariano de Souza**, Federal Institute of  
Espirito Santo, TMS member since 2024

### Jerry Silver Award for Best Paper

**Ronald J. O'Malley**, Missouri University of  
Science and Technology, TMS member since  
2020

### Richard J. Fruehan Award for Best Paper

**Susanne Michelic**, Montanuniversitaet Leoben,  
TMS member since 2024



## Chris G. Van de Walle Honored by American Physical Society

The American Physical Society (APS) has selected **Chris G. Van de Walle** as the 2025 recipient of the Aneesur Rahman Prize for Computational Physics. Van de Walle, a distinguished professor of materials at the University of California, Santa Barbara, will accept the award at one of the 2025 APS meetings where he will also deliver the 2025 Rahman Lecture. This award is the highest honor given by APS in the field. His citation reads: "For the development and application of first-principles methods for computing the structural, electronic, and optoelectronic



properties of point defects and interfaces."

Van de Walle has been a TMS member since 2014 and has received the TMS Functional Materials Division John Bardeen Award. He is a member of the National Academy of Engineering and is a fellow of APS, the Institute of Electrical and Electronics Engineers, the American Association for the Advancement of Science, Materials Research Society, and the American Vacuum Society. Additionally, Van de Walle has been named a Highly Cited Researcher in six of the last seven years by Clarivate Analytics. In 2022, he was awarded the U.S. Department of Defense (DOD) Vannevar Bush Faculty Fellowship—a five-year fellowship that is considered the most prestigious single-investor award conferred by the DOD.

## Industrial Aluminum Electrolysis Course 2024



Instructors and attendees of the Industrial Aluminum Electrolysis (IAE) Course 2024 on Advancing Aluminum Production gathered for a graduation dinner on December 5. The IAE 2024 course was held December 1–6, 2024, in Sydney, Australia, and focused on enabling a better understanding of constraints, opportunities, and practices for improving cell design, productivity, energy efficiencies, and decarbonization. (Photo courtesy: levgen Necheporenko, IAE 2024 course attendee.)

## In Memoriam

**TMS offers its condolences to the families, friends, and colleagues of the following members who have recently passed away.**

**William W. Gerberich**, professor emeritus of chemical engineering and materials science, University of Minnesota, passed away on October 11, 2024. Gerberich studied at Case Institute of Technology and Syracuse University prior to joining the NASA Jet Propulsion Laboratory in California in 1959. He then worked at Ford Aeronautic and Aerojet General before he was recruited to Lawrence Berkeley National Laboratory and the University of California, Berkeley. In 1971, Gerberich moved to the University of Minnesota, where he remained for 44 years, authoring more than 500 publications and mentoring approximately 135 students during his career.

Gerberich initially joined TMS as a member of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) in 1962. Throughout his membership, he was involved in several technical committees and was a reviewer for *Metallurgical and Materials Transactions A*. He is a TMS Fellow and a recipient of the Morris Cohen Award.

**Todd Allen Leonhardt** passed away on May 29, 2024. Born on November 16, 1961, in New Castle, Pennsylvania, Leonhardt was educated at Pennsylvania State University before moving to Cleveland, Ohio, to work at Rhenium Alloys Inc. Leonhardt remained at Rhenium for 26 years, working as director of R&D and chief metallurgist.

A TMS member since 1998, Leonhardt was actively involved in the Refractory Metals & Materials Committee, serving as committee chair and member of the Structural Materials Division Council. He was also a longtime *JOM* advisor. Leonhardt was also involved with the Refractory Metals Association, serving as president from 2014 to 2018. In 2023, he received the Distinguished Service to Powder Metallurgy Award from the Metal Powder Industries Federation.

# JOM Talks with 2024 TMS President Srini Chada

Kelly Zappas



**Srinivas Chada**, senior manager PM&P at General Dynamics Mission Systems, completes his term as 2024 TMS president at the TMS 2025 Annual Meeting & Exhibition (TMS2025), March 23–27, in Las Vegas, Nevada. In this conversation with *JOM: The Magazine*, Chada reflects on his experiences as TMS president and his hopes for the Society's future.

**JOM: What are some of the challenges you faced during your presidential year?**

**Srini Chada:** I wouldn't call it a challenge, exactly, but being the president does come with the significant responsibility of taking on the mantle of TMS. As president, you're representing 10,000+ members—all highly intelligent people. We are a ground-up organization, not like other societies where it is top-down. The president has one vote on the board, and there's no veto power, which is good. When you are leading in that environment, your whole responsibility is to talk about what the strategy should be and how it should be implemented. We have to separate the wheat from the chaff before putting something in front of the board of directors, so as not to burden their time.

It is also the president's responsibility to represent the whole membership when addressing the board, but how do you find the right decision that best represents our full membership? Everybody believes TMS is their home Society. We have five divisions, but if you look at the membership of the five divisions, it's not equal. The Functional Materials Division (FMD), which I used to chair, is the smallest, but it has many committees, and they are all passionate about their areas. So, getting that representation in front of the Board is a president's responsibility.

**JOM: What were some of your priorities as president?**

**Chada:** We are a bottom-up organization. Unlike other organizations where the president wants a legacy, I don't think any of us are looking for a legacy. We are

looking to maintain that cadence from previous years, but also to spearhead and move forward one or two programs of our own. This was a good suggestion I got from one of the past presidents. He said, "Don't say 200 things that you want to do. You won't be able to do it. Put forward one or two agenda items that you can achieve." As president, you're not going to shake up everything. We don't do it that way—and rightfully so. There is a cadence to the leadership of our organization; that's the whole reason for the three-year presidential cycle. In the first year, as vice president, you are already in the mix and have started contributing as you move into the second year—your presidential year. In your third year, you continue on as past president, still helping out so that the organization is very well set and the leadership transitions are smooth.

One of the goals I set for myself as president of TMS is to have more collaborations with industry. We started on a good foot, but the question is, where are the results? I'm not a very patient man by nature, but I've had to learn patience with this. We started this effort, and if you plant a seed, it's not going to grow into a tree by the end of the year.

**JOM: What do you consider to be your greatest contribution as president?**

**Chada:** Like I said, it remains to be seen how my contributions will grow. At the start of this year, we had several societies come and approach us wanting to be partners, and we are putting forth efforts to look more closely at some of those potential partnerships. I went to India to meet with leaders from the Indian Institute of Metals (IIM) about potential future collaborations. I got to meet a couple of their key players, and the feedback was very positive. TMS doesn't do flash-in-the-pan deals. We want long-term relationships. So we're exploring that with IIM, but these things take time. I'm not in a hurry now. One thing that the TMS presidency has taught me, or being on the Board has taught me, is to have patience, whether I have it everywhere else in the world or not. In this area, I'm





Srinu Chada addresses the audience at the TMS-AIME Awards Ceremony & Reception during the TMS 2024 Annual Meeting & Exhibition in Orlando, Florida, in March.

cultivating it, and I thank TMS for that. There are several other collaborations we are trying, and it remains to be seen if they will bear fruit or not. We will know in a couple of years.

### **JOM: What have you found most fulfilling about serving as President?**

**Chada:** I'd say building relationships—both with individual members and with other societies.

The biggest instant gratification is that I got to meet a lot of members at conferences. I feel that all our presidents are approachable. None of us run away from engaging with other members at events. That kind of informal interaction is fantastic, and I'm glad the members feel that they can come and talk to us. So, what I've found most fulfilling about serving as President is talking to the members.

Another fulfilling part has been building new relationships with other societies. In addition to visiting IIM this year, we are exploring expanded collaborations with many societies, including ASM International; the Society for Mining, Metallurgy, and Exploration; the Korean Institute of Metals and Materials; and others. We're strengthening our relationships and opening up opportunities for more joint efforts. We need the right partners, and I trust our board and team to make the right decisions.

### **JOM: TMS meetings had a challenging couple of years due to the pandemic. Did that change in 2024?**

**Chada:** I think we did sort of come out of the tunnel from COVID this year. There's still a little bit of a

hangover from it, financially, but the TMS 2024 Annual Meeting & Exhibition in Orlando was a big hit, and we're expecting even bigger things in Las Vegas for 2025. The early numbers are indicating that we'll break records. I can't take any credit for this. I just happen to be president this year; it's more of a team effort. I'm very proud of the austerity measures our Society took over the last couple of years to get us through that difficult time. Compared to other societies that lost millions, we tightened our belts, kept our bearings, and are recovering well.

We also held the first installment of the TMS Specialty Congress in June 2024. It wasn't quite as well-attended as we'd hoped, but this was our first outing for this type of event, which consolidates several specialty conferences in one location. Still, I think we planted the right seed, and with a little bit more tweaking and watering, it should bear fruit at the next installment in 2025.

### **JOM: What lessons are you taking with you from your presidential experience?**

**Chada:** Seeing how the wheels of the Society move, seeing our mechanisms, and how it all works has been enlightening. TMS thrives on long-term relationships and long-term plans. Not that we don't have quick-turn stuff—we do—but we always think, "How do we keep doing this? How do we sustain it?" So that's the greatest part of the lesson I learned.

The other lesson I've learned is the value of the diversity of people we have in this Society and the support that we have for diversity, equity, inclusion, and accessibility (DEIA) at TMS. I'm extremely proud of our commitment to DEIA. When the Board had to decide whether we would go back to Florida—which has introduced some controversial DEIA legislation in recent years—for a future meeting, we gave an answer with one voice: no. It was a tad costly decision financially, but what we preach is what we live. We don't just talk about DEIA; it's in our DNA. I'm extremely proud of my home Society for making this decision and for the overwhelming response of members who supported it. We didn't compromise our values in the face of a tough financial decision, and that's a great lesson to take away.

### **JOM: Any parting thoughts?**

**Chada:** It's been a privilege and an honor to serve as TMS president. I might be signing off as president, but I'll always be part of TMS. I'll contribute to my home Society in any way I can, possibly by going back to work with the technical committees to help mentor future leaders. So many people have given me so much help over the years. TMS is like a family to me, and I hope to help make TMS the home Society for a new generation of members, as best as I can.

# ANNOUNCING THE 2025 TMS SOCIETY AWARD RECIPIENTS

KAITLIN CALVA



**TMS**  
The Minerals, Metals & Materials Society

**AIME**  
Founded 1871  
AMERICAN INSTITUTE OF MINING,  
METALLURGICAL, AND PETROLEUM ENGINEERS

**TMS**  
FOUNDATION

As the saying goes, "It takes a village."

The awards listed in the following pages are not only a testament to the dedicated and brilliant minds receiving honors this year, but also many others. From the mentors and scholars who have inspired careers, to the students and colleagues now being guided on new journeys. From the associates and collaborators who partner on research projects, to the friends and family who steadfastly support their work. It is apparent from the many personal stories told here that the minerals, metals, and materials science and engineering community, indeed the TMS community, is vital to the success of the individual as much as the individual is vital to the success of the community.

This article highlights Society-level awards, spanning all career stages—early career professionals, lifetime contributions, and everything in between. These honors will be conferred during the TMS-AIME Awards Ceremony at the TMS 2025 Annual Meeting & Exhibition (TMS2025) in Las Vegas, Nevada, from March 23–27, 2025. In addition to the awards presented by TMS, the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) and Acta Materialia Inc. will also present several of their awards to TMS members. Visit [www.tms.org](http://www.tms.org) /TMS2025 to learn more about awards events at TMS2025, and [www.tms.org/Awards](http://www.tms.org/Awards) to learn more about each of the awards listed in this article.



# TMS SOCIETY AWARDS

## TMS Fellows



**Nikhilesh Chawla**  
*Ransburg Professor and Associate Dean of Engineering, Purdue University*

**Citation:** *For advancing 4D characterization techniques to predict and describe material performance across multiple classes of materials.*

"It is an honor to be selected as a TMS Fellow. I feel humbled to be included among so many luminaries in the field of materials science and engineering."



**Tadashu Furuwara**  
*Professor, Tohoku University*  
**Citation:** *For seminal contributions to the physical metallurgy of steels and other alloys for controlling microstructures through phase transformations and recrystallization.*

"It is a great honor for me to receive the TMS Fellow Award since TMS is very special to me, as my home society throughout my entire career. I would like to express my deepest gratitude to my mentors, supervisors, colleagues, collaborators, students, and, finally, my family, for all their support over the years."



**Robert Hyers**  
*George I. Alden Professor and Head, Department of Mechanical and Materials Engineering, Worcester Polytechnic Institute*

**Citation:** *For outstanding contributions to the practice of metallurgy, materials science, and technology through exemplary contributions to high-temperature materials processing systems.*

"It is a great honor to be selected to join the esteemed group of TMS Fellows. TMS has been my professional home for almost three decades now. I am grateful for the warm welcome I received, for the friendships and collaborations that began and continued, and for the opportunity to learn and share new knowledge. I am grateful for the opportunity to give back through service to the Society, and once in a while, to make a difference."



**Ursula Kattner**  
*Physical Scientist, National Institute of Standards and Technology*

**Citation:** *For outstanding contributions to advanced models and databases of computational thermodynamics, notably for superalloys and lead-free solders.*

"TMS has given me the opportunity to enjoy collaborations and friendships with many mentors and colleagues from industry and academia, and to follow the newest developments in materials science and engineering. I am delighted and greatly honored for being elected to join the highly respected group of TMS Fellows."



**Jian-Feng Nie**  
*Professor, Monash University*  
**Citation:** *For outstanding contributions to the fundamental understanding and technological development of magnesium alloys and aluminum alloys.*

"I am deeply honored to be selected to join such a distinguished group of scholars and experts, whose work has inspired me at different stages of my research journey."



**Judy Schneider**  
*Professor, University of Alabama in Huntsville*

**Citation:** *For sustained influential and pioneering advancements in the field of advanced manufacturing processes, and for the mentoring and development of the next generation of engineers and professors.*

"TMS continuously provides the opportunity to interact with my colleagues in academia, government, and industry. These interactions have had a significant influence on the progression of my career. TMS has also provided a warm and friendly atmosphere for my students as they make their first professional presentations to peers in their fields."



**Kenneth Vecchio**  
*Distinguished Professor, University of California, San Diego*

**Citation:** *For advancing the field of computational and experimental high throughput materials discovery and validation in academic and industrial communities in the U.S. and worldwide.*

"I joined TMS while an undergraduate student at Carnegie Mellon University more than 40 years ago, and TMS has been an impactful part of my professional career ever since. TMS has provided opportunities for leadership development and intellectual curiosity that have motivated my academic and commercial business activities. TMS meetings have also provided an important forum for fostering both personal and professional relationships that mean a great deal to me."

## Alexander Scott Distinguished Service Award

**John Smugeresky**

**Retired, Sandia National Laboratories**

**Citation:** *For profound and sustained impact to TMS through revitalization and planning, board leadership, technical vision, and volunteer engagement, particularly through the Materials Processing & Manufacturing Division and Programming Committee.*

"Getting this award means the world to me! TMS membership has enabled me to meet and work with leaders in advancing the state of the art of materials science and engineering. It was a team effort, and I am grateful for all those who worked with me!"

## Brimacombe Medalists



**Kester Clarke**

**Group Leader, Los Alamos National Laboratory**

**Citation:** *For sustained contributions to the science and application of metals processing, outstanding service to our technical community, and excellence in*

*mentoring.*

"I have gained so much professionally and personally from my participation in TMS that the experience has been rewarding in and of itself, but it is wonderful to be named a Brimacombe Medalist and I am deeply honored. Thank you to all those who have mentored and taught me throughout my career and looking forward to the future."



**Remi Dingreville**

**Distinguished Member of the Technical Staff, Sandia National Laboratories**

**Citation:** *For elucidating materials response mechanisms in extreme environments through the pioneering fusion of computational materials and data*

*sciences, and for service to the materials community.*

"TMS has been a home for me to grow scientifically, connect with peers, and engage with the materials and metallurgy community. Being recognized with this award is as much about individual recognition as it is about the scientific community who have supported and challenged me, and I thank this entire community for this honor that reflects the power of collaborative work and shared knowledge."



**Jaafar El-Awady**

**Professor, Johns Hopkins University**

**Citation:** *For pioneering advances in physically reliable modeling and experiments, fundamental insights into dislocation-based fatigue, and leadership in the promotion of multiscale materials modeling.*

"As a proud TMS member since 2007, I've witnessed firsthand the Society's commitment to advancing our field. As such, I am deeply honored to be recognized as a TMS Brimacombe Medalist. This achievement is a testament to the collective support and inspiration I've received throughout my career. I extend my heartfelt gratitude to the many mentors who guided me, the colleagues who collaborated with me, the students and postdocs who challenged and motivated me, and the friends and family who stood by me. Their unwavering support has been instrumental in shaping my professional journey. To me this award is not a personal accomplishment, but a celebration of the collaborative spirit that drives innovation in our field."



**Robert Maass**

**Institute Director and Department Head, Federal Institute of Materials Research and Testing (BAM)**

**Citation:** *In recognition for outstanding contributions to advancing the fundamental understanding of strain-localization mechanisms and microplasticity in amorphous and crystalline metals.*

"I am so honored and grateful for this recognition by TMS, which I think is the world's home for materials science! This award tells me that my group's work excites peers and that they recognize its scientific quality. Well done, Maassters, I am proud of you and I humbly thank TMS for being a career-long supporter, a bringer of friends, and a true source of inspiration and professional growth."



**Tim Rupert**

**Professor of Materials Science and Engineering and Director of the Hopkins Extreme Materials Institute, Johns Hopkins University**

**Citation:** *For exemplary contributions to the science of nanocrystalline metals and interfacial science, the education of future materials scientists, and service to the profession.*

"I am so very honored to be selected as a Brimacombe Medalist. TMS has been my home society for many years, and it is incredibly meaningful to be recognized here. I see it as a call to action to continue contributing to this community that has helped me so much."





**Michael Sangid**  
**Reilly Professor, Purdue University**  
**Citation:** *For discovery and development of new microstructure-based modeling approaches and in situ experimental characterization to identify the deformation and failure of structural materials.*

"I am honored to be named a Brimacombe Medalist, and I want to extend my deepest appreciation to my graduate students, collaborators, and supporters for enabling this recognition. I am extremely grateful to TMS and the TMS Foundation for bringing together the materials community, and I have appreciated the opportunity to learn and participate in the organizational structure of TMS. I look forward to the annual meeting each year for the highest caliber of technical content and to meet and catch up with friends and colleagues."



**Kiran Solanki**  
**Professor, Arizona State University**  
**Citation:** *For remarkable achievements in the development of bulk nanocrystalline materials and surface modification techniques for traditional metals, leading to advancements in space and commercial applications.*

"I'm deeply honored to receive the Brimacombe Medal from TMS, a community that has been pivotal in my professional growth. I'm grateful to my mentors, colleagues, family, and the entire TMS community for their unwavering support. I look forward to giving back and helping nurture the next generation of leaders in our field."



**Douglas Spearot**  
**Professor, University of Florida**  
**Citation:** *For scientific advancements related to dislocations and grain boundaries in metallic materials via numerical simulation, and for technical and administrative service to the TMS*

*community.*

"I am honored to be selected as a Brimacombe Medalist, and I thank TMS for their support of this award. I made the decision at the start of my career that TMS was going to be my professional society home, based on the quality of the technical programming and the openness of members to exchange scientific ideas, but also the quality of the personal friendships that I have built through service within the Society. Not once I have regretted my decision. I look forward to many more years of scientific and service engagement within TMS."



**Janelle Wharry**  
**Professor, University of Illinois**  
**Citation:** *For her contributions to understanding structure-property evolution of nuclear and irradiated materials, and her visionary leadership in the nuclear materials research community.*

"TMS has been instrumental in my professional development and has enabled me to achieve far beyond what I thought my capabilities were. Being amongst the eminent scientists who have been named Brimacombe Medalists is a tremendous honor. Thank you to the students and postdocs who have entrusted me with several years along their professional journeys—this recognition is a testament to their scholarship. I am grateful to my nominators, collaborators, and confidantes who have shown me what effective mentorship and advocacy look like."

## Bruce Chalmers Award



**Charles-André Gandin**  
**Research Director, Centre National de la Recherche Scientifique**  
**Citation:** *For his major contribution in the field of solidification modeling, in particular the development of the CAFE model coupling heat-transfer phenomena with microstructure formation mechanisms.*

"I am first grateful to Professor Michel Rappaz for his mentorship at the beginning of my journey into the field of solidification, both fundamentals and processing, to the numerous talented colleagues and collaborators with whom I share this award, and to my family for their unconditional and invigorating support. Over the years, TMS has played a key role in my career, establishing the necessary critical links and creating the conditions for open forum discussions."

## Cyril Stanley Smith Award



**Gregory Rohrer**  
**W.W. Mullins Professor, Carnegie Mellon University**  
**Citation:** *For pioneering work in quantifying the underlying atomic, nano, and microstructural mechanisms that govern high temperature deformation of*

*materials.*

"Cyril Stanley Smith was a pioneer in microstructure science and, because I have attempted to follow the inspiring path he established, it is a profound honor to accept this award. I would like to thank all of my current and former students, colleagues, and collaborators whose brilliance, hard work, and support made it possible to advance our scientific understanding of grain boundaries and microstructures."

## Ellen Swallow Richards Diversity Award



**Matthew Korey**  
Associate R&D Staff, Oak Ridge National Laboratory

**Citation:** For the creation of PRIDE events, efforts improving the climate at every institution [to which] he belongs, and efforts empowering and inspiring

people of many identities.

## Frank Crossley Diversity Award



**Aerial Murphy-Leonard**  
Assistant Professor, The Ohio State University

**Citation:** For being a pioneering figure in STEM who has surmounted numerous challenges and paved the way for others.

"Winning this award is meaningful to me because it affirms the value of inclusivity and representation in all aspects of life, especially academia and STEM. This recognition inspires me to continue advocating for equitable opportunities and to foster environments where diverse voices are celebrated and empowered to lead."

## Institute of Metals Lecturer & Robert Franklin Mehl Award



**Gary Was**  
Professor Emeritus, University of Michigan

**Citation:** For seminal contributions to the intersection of radiation materials science and environmental degradation of structural materials in extreme environments.

**Presentation:** "Answering the Challenge to Rapid Qualification of Reactor Core Materials for Advanced Reactor Designs"

## Julia and Johannes Weertman Educator Award



**Gerald Frankel**  
Distinguished Professor of Engineering, The Ohio State University

**Citation:** For innovation in the teaching of corrosion science and engineering at undergraduate and graduate levels, in short courses for professionals, and for mentoring of students and professionals.

"My career has been devoted to the complex and ever-relevant topic of corrosion and the environmental degradation of materials. I have been honored to work with many outstanding students, postdocs, and colleagues to address the important issues in the field. I am grateful that this award recognizes how I have shared my passion by teaching corrosion to thousands of students and professionals."

## Leadership Award



**Toru H. Okabe**  
Professor, The University of Tokyo

**Citation:** For visionary and exemplary leadership in research, education, and management with emphasis on value addition and recycling of nonferrous metals and their public discourse in the media.

"As a Japanese person, I am truly grateful for the recognition of my leadership at a major academic conference in North America. I am also grateful for the many friends and acquaintances I have made through TMS."

## Morris Cohen Award



**Sergei Shipilov**  
President, FIRST-M Consulting Ltd.

**Citation:** For advances in the fundamental understanding on environmental effects on mechanical properties and integrity materials.

"I am truly honored to receive the Morris Cohen Award, a significant milestone in my life, especially when reflecting on the esteemed individuals who have received it before me. This award marks an important moment in my career, which began in 1983 when I was admitted to a doctoral program at the then-USSR Academy of Sciences. In my Ph.D. thesis from 1987, I referenced works from 1975 and 1980 by two previous recipients of this award. I then met them in 1993 and 2002, and I met a third recipient in 2003—long before this award was established by TMS in 2012. It's remarkable how small the world can be!"

## Oleg D. Sherby Award



**Kevin Hemker**  
Professor, Johns Hopkins University

**Citation:** For pioneering work in quantifying the underlying atomic, nano-, and microstructural mechanisms that govern high-temperature deformation of materials.

"I got to know Oleg Sherby very well when I was a student at Stanford University, and I always admired his love of science and the positivity and enthusiasm that he radiated. To say that I tried to emulate him as a professor and as an individual would be an overstatement of my abilities. I am honored and grateful to receive this award and want to thank Jeff Wadsworth for making it possible to remember Oleg in this way."



## Research to Industrial Practice Award



**Hani Henein**  
*Professor, University of Alberta*  
**Citation:** For outstanding achievement in transferring research, including rapidly solidified powders, pipeline steels, and novel thermophysical property measurement, to

commercial production and practical use.

"I have been nurtured with my TMS membership for over four decades. I have been inspired by many colleagues and friends at TMS meetings, by my graduate students, and by my industrial partners. They have enriched me and my work. As engineers, translating new knowledge to industrial practice is an important way of giving back to society the privilege they give us to freely think, research, learn and teach. It takes a village to create and translate new knowledge. I am grateful for my students, industry partners who have put their trust in my work, TMS friends, my nominators, the TMS Honors and Professional Recognition Committee, and the TMS Board of Directors for their part in my village."

## Sadoway Materials Innovations and Advocacy Award



**In-Ho Jung**  
*Professor, Seoul National University*  
**Citation:** For leadership, pioneering work, and global education of computational thermodynamics for sustainable steelmaking and pyrometallurgy technology research & development.

"I am happy to be recognized for my work on thermodynamic databases and process simulation models as innovative tools for materials development. This award encourages me as an ambassador of computational thermodynamics to continue the education of this innovative tool to students and researchers around the world."

## William D. Nix Award



**Terence G. Langdon**  
*Professor of Materials Science, University of Southampton*  
**Citation:** For classical contributions to deformation mechanisms at high temperatures, including creep and superplasticity.

"It is a great pleasure for me to receive this award. I have followed the research of William Nix for many years, with an emphasis on the mechanical behavior of metals, and I have learned much both from his insightful interpretations of dislocation properties and creep mechanisms and from the careful and dedicated mentoring of the members of his research team."

## William Hume-Rothery Award



**Long-Qing Chen**  
*Hume Professor of Materials Science and Engineering, Pennsylvania State University*  
**Citation:** For his contributions to theories and fundamental understanding of phase transformations and microstructure

evolution in alloys and functional materials.

**Lecture:** "Thermodynamic Basis for the Phase-field Method of Microstructure Stability and Evolution"

## AIME AWARDS

### AIME Honorary Membership Award



**Surya Kalidindi**  
*Professor, Georgia Institute of Technology*  
**Citation:** For contributions to crystal plasticity models, high-throughput mechanical test protocols, and microstructure-sensitive design of

structural materials using artificial intelligence toolsets.

"I am deeply honored by this recognition from TMS, which has provided so many invaluable opportunities for me throughout my career for establishing highly productive research collaborations, attending the best conferences in my field, and effectively disseminating research results to the broader community. I want to thank all my collaborators (Ph.D. students, postdocs, and faculty colleagues, including my nominator for this award, Prof. McDowell), who have patiently taught me everything I know."



**Pradeep Rohatgi**  
*UWM Distinguished Professor and Director of UWM Centers of Composite Materials and Materials Manufacturing, University of Wisconsin-Milwaukee (UWM)*  
**Citation:** A recognized world leader in research on solidification processing of

metal-matrix composites and education of materials professionals, and founder of laboratories for materials research.

"I am humbled by my selection to AIME Honorary Membership, I hope I prove worthy of the recognition. I am very grateful to TMS and AIME to have provided me with the opportunity to learn about materials, share my own research, and interact with my peers over the last sixty years. I am thankful to my professors, my colleagues, my students, my employers, and funding agencies who helped enhance my understanding of materials science and engineering and helped me contribute to the field."



## AIME Champion H. Matthewson Award

Thomas Mann and Michael Fahrmann, *Haynes International Inc.*; Michael Titus, *Purdue University*

**Paper:** "Deformation-Induced Planar Defects in Immm Ni<sub>2</sub>(Cr, Mo, W) Strengthened HAYNES\_244\_ Superalloy," *Metallurgical and Materials Transactions A*, May 2023

Michael Pagan, *University of Georgia*; Takahito Ohmura, *National Institute for Materials Science*; Ling Wang, *Covalent Metrology*; Steve Zinkle, *University of Tennessee*; Sudarsanam S. Babu, *University of Tennessee and Oak Ridge National Laboratory*

**Paper:** "Strengthening Effects at Dissimilar Metal Interfaces Created by Ultrasonic Additive Manufacturing," *Metallurgical and Materials Transactions A*, October 2022

## AIME Robert Lansing Hardy Award



**Alexandra Anderson**  
*Technical Expert, Nonferrous Metals, RHI Magnesita*

**Citation:** *For outstanding contributions in extractive metallurgy, recycling of metals, and metal processing, demonstrating exceptional promise of a successful career.*

"TMS has played a pivotal role in shaping my career by providing a stimulating technical forum and a supportive networking environment. Attending TMS meetings always revitalizes me with a sense of excitement to tackle technical challenges and develop new ideas. I am truly grateful to be selected as the 2025 recipient of the Robert Lansing Hardy Award and look forward to honoring the spirit of the award through continued contributions to the field and TMS for many years to come."

## TMS/SME/AIME James Douglas Gold Medal



**Kathleen Altman**  
*Business Owner, AKA Pros, Inc.*

**Citation:** *For her exemplary achievement in nonferrous metallurgy, especially for the beneficiation of ores, and distinguishing herself as a practitioner in the art and science of mineral beneficiation.*

## ACTA MATERIALIA AWARDS

### Acta Materialia Gold Medal Award



**Marc A. Meyers**  
*Professor, University of California, San Diego*

**Presentation:** "Journey to the Center of the Earth: Using High Power Lasers to Explore Extreme Regimes"

### Acta Materialia Silver Medal Award



**Corinne Packard**  
*Assistant Professor, Colorado School of Mines*

**Presentation:** "Stress State's Controlling Role in Deformation and Transformation of Rare-Earth Orthophosphate Ceramics"

### Acta Materialia Holloman Materials and Society Award



**Richard Spontak**  
*Professor, North Carolina State University*

**Presentation:** "Water-Activated Polymers to Mitigate Growing Global Challenges"

## CELEBRATE YOUR COLLEAGUES: AWARD NOMINATIONS DUE APRIL 1

If you know someone who has made a significant impact on their field or has been of great service to the TMS community, nominate them for a 2026 TMS Award. The submission deadline for the 2026 awards cycle is approaching, so don't delay. **Send in your nomination by April 1, 2025.**

Visit [www.tms.org/Awards](http://www.tms.org/Awards) to explore the many honors and awards available through TMS and to learn more about the nomination process and submission requirements. For additional information, contact Deborah Hixon, TMS Awards Program Manager, at [hixon@tms.org](mailto:hixon@tms.org).

Kaitlin Calva is an independent contributor and former editor of *JOM: The Magazine*.

# 2025 TMS DIVISION AWARDS

## HONORING OUTSTANDING ACCOMPLISHMENTS

**KAITLIN CALVA**



Notable contributions to the field. Excellence in advancing research or practical problem-solving. Outstanding service to the Society. These are just some of the remarkable qualities in the TMS Division Award recipients. The 2025 awardees, highlighted in the following pages, are recognized for their scholarly, leadership, or mentoring accomplishments that have elevated the field and inspired others.

Many of the recipients included in this article will be presented with their awards at various division luncheons or technical sessions held throughout the week at the TMS 2025 Annual Meeting & Exhibition (TMS2025) in Las Vegas, Nevada, scheduled for March 23–27, 2025. Learn more about each of these awards, including current and past recipients, at [www.tms.org/Awards](http://www.tms.org/Awards).



## EXTRACTION & PROCESSING DIVISION (EPD) AWARDS

### EPD Distinguished Lecturer Award



**Adam C. Powell IV**  
Associate Professor, Worcester  
Polytechnic Institute

**Citation:** For outstanding scientific leadership in nonferrous extraction and processing through sustainable processes based on renewable energy and techno-economic analysis of emerging technologies.

**Lecture:** "Energy-Intensive Metal Processing in the Age of Low-Cost Intermittent Renewables"

### EPD Distinguished Service Award



**Dean Gregurek**  
Senior Mineralogist, RHI Magnesita

**Citation:** For his dedication and enthusiasm supporting the wider pyrometallurgy community, and the EPD in particular in various key roles and as co-organizer of over 10 symposia.

"I am truly honored and grateful to receive the EPD Distinguished Service Award. My long-standing dedication to TMS has allowed me to engage in meaningful exchanges, build strong and lasting international relationships, and contribute to TMS symposia. This recognition reinforces my commitment to serving our community, and I look forward to continuing my efforts with even greater enthusiasm."

### EPD Pyrometallurgy Best Paper Award

Ryoung Rae Kim, Hyun Ju Kim, and Joo Hyun Park, *Hanyang University*; and Hyun Sik Park, *Korea Institute of Geoscience and Mineral Resources (KIGAM)*

**Paper:** "Thermodynamics of Palladium Dissolution Behavior in FeO-SiO<sub>2</sub>-CaO-Al<sub>2</sub>O<sub>3</sub>-MgO Slag at 1873 K," *Metallurgical and Materials Transactions B*, August 2024.

### EPD Materials Characterization Best Paper Award

#### FIRST PLACE

Peisheng Lyu, Wanlin Wang, Lankun Wang, and Hui Xu, *Central South University*

**Paper:** "New Method for the Production of Medium-Mn Steel with Micro-segregation Bands Induced by Sub-rapid Solidification," *Characterization of Minerals, Metals, and Materials 2024: Process-Structure-Property Relations and New Technologies*, February 2024.

#### SECOND PLACE

Bo Liu, Lian-ying Wen, and Dong Yue, *Chongqing University*; and Jiulin Tang, *Dongfang Boiler Co. Ltd.*

**Paper:** "Numerical Multi-field Coupling Simulation of Multiple Slab Stacks Heated by Natural Gas Combustion in a Trolley Furnace," *Characterization of Minerals, Metals, and Materials 2024: Process-Structure-Property Relations and New Technologies*, February 2024.

#### THIRD PLACE

Xu Gao, Guangheng Ji, and Wanlin Wang, *Central South University*

**Paper:** "Separation of Iron and Phosphorus from High-Phosphorus Oolitic Hematite Using Direct Reduction and Magnetic Separation," *Characterization of Minerals, Metals, and Materials 2024: Process-Structure-Property Relations and New Technologies*, February 2024.

### EPD Materials Characterization Best Poster Award

#### FIRST PLACE

Colton Basar, Amit Datye, Salena Huang, Janelle Schroers, Udo Schwarz, and Shuhan Zhang, *Yale University*

**Poster:** "Mapping Mechanical Properties to Composition for TiAlNb and TiNiNb Alloys"

## FUNCTIONAL MATERIALS DIVISION (FMD) AWARDS

### FMD Distinguished Service Award

Albert Wu, Professor, National Central University, Taiwan

**Citation:** For distinguished leadership within the TMS FMD through building and sustaining the electronic interconnection community, committee leadership, and successful symposium and workshop organization.

### FMD Journal of Electronic Materials Best Paper Award

Jiaqiang Huang, *Guilin University of Electronic Technology*; Han Jiang, *Anhui University*; and Shuibao Liang, *Hefei University of Technology*

**Paper:** "Study on Phase Electromigration and Segregation Behavior of Cu-Cored Sn-58Bi Solder Interconnects under Electric Current Stressing," *Journal of Electronic Materials*, March 2024.

## FMD John Bardeen Award



Elias Towe, *Albert and Ethel Grobstein Professor and University Professor, Carnegie Mellon University*

**Citation:** For pioneering and seminal research on semiconductor quantum structures and their understanding, development and applications in

heterogenous photonic and electronic devices and systems.

"I am grateful and humbled to have been selected for this award, which is given in memory of John

Bardeen—a luminary in solid-state physics and a two-time Nobel Laureate—whose contributions to semiconductors and its subsequent impact on his co-invention of the bipolar transistor kick-started the microelectronics revolution that continues to profoundly impact society. I am honored to be included among the accomplished previous winners of this award and gratefully share the award with my former students, postdoctoral research associates, and collaborators."

## LIGHT METALS DIVISION (LMD) AWARDS

### Light Metals Award

Alf Bjorseth, David Jarvis, Rosie Mellor, and Rosanna van den Blik-Jarvis, *Vacasa Inc.*

**Paper:** "Novel Developments for Inert Anodes and Wettable Cathodes in Aluminum Electrolysis," *Light Metals 2024*.

### LMD JOM Best Paper Award

Jinghao Lan, Mengnan Li, Zhanwei Liu, Qiang Liu, Chengcheng Xia, and Hengwei Yan, *Kunming University of Science and Technology*

**Paper:** "Sodium Removal from Aluminum Electrolysis Spent Anodes (Butts) Through Aluminum Sulfate Hydrothermal Acid Leaching," *JOM*, March 2024.

### Light Metals Subject Awards

#### Alumina/Bauxite

Hong Peng and James Vaughan, *The University of Queensland*; Dilini Seneviratne, *Rio Tinto*; John Vogrin, *Zeotech Limited*; and Sicheng Wang, *China Agricultural University*

**Paper:** "Chemical Thermodynamics and Reaction Kinetics of Bayer Process Desilication," *Light Metals 2024*.

#### Aluminum Alloys

Hrishikesh Das, Lei Li, Sridhar Niverty, Mayur Pole, Md Reza-E-Rabby, and Ayoub Soulami, *Pacific Northwest National Laboratory*; and Jorge Fernandez Dos Santos, *Stirtec*

**Paper:** "Meshfree Process Modeling and Experimental Validation of Friction Riveting of Aluminum 5052 to Aluminum 6061," *Light Metals 2024*.

#### Electrode Technology for Aluminum Production

Andre Bouchard, Luc Cote, Hans Darmstadt, and Marie-Josée Dion, *Rio Tinto*

**Paper:** "Estimation of the Coke Calcination Yield by Granulometry Analysis," *Light Metals 2024*.

#### Warren Peterson Cast Shop for Aluminum Production

Helmut Antrekowitsch, Stefan Tichy, and Stefan Wibner, *University of Leoben*; Bernd Prillhofer and Philip Pucher, *AMAG Casting GmbH*; and Simon Doppermann, *Austrian Institute of Technology*

**Paper:** "Influence of Water Vapor on the Oxidation Behavior of Molten Aluminum Magnesium Alloys," *Light Metals 2024*.

#### Recycling

Amilton Barbosa Botelho Junior, *Massachusetts Institute of Technology*; Rafel de Oliveira, Andre Ferrarese, Luciana Assis Gobo, Anastássia Maria Nunes de Oliverira Lima, and David Vasconcelos de Silva, *Tupy Tech*; Elias Kumoto, *MWM Motores e Geradores*; Denise Crocce Romano Espinosa and Jorge Tenório, *University of São Paulo*

**Paper:** "LAREX-Tupy Process: Recycling of Li-ion Batteries from Electric Vehicles by Hydrometallurgical Route Towards Circular Economy," *TMS 2024 153rd Annual Meeting & Exhibition Supplemental Proceedings*.

Gisele Azimi, *University of Toronto*, and Maziar Sauber, *CanmetMINING*

**Paper:** "Technoeconomic Analysis of Supercritical Fluid Extraction for Recycling Rare Earth Elements from Neodymium Iron Boron Magnet," *Energy Technology 2024*.



## LMD Magnesium Technology Awards

### Best Poster

Artem Lurkovskiy, Adam C. Powell, and Daniel McArthur Sehar, *Worcester Polytechnic University*; and Amy Telgerafchi, *NextEra Energy Resources*

Poster: "A Reduced Order Model of Magnesium Distillation"

### Best Paper – Application

Cody David, Adam Griebel, and Jeremy Schaffer, *Fort Wayne Metals*; Roger Guillory II, *Medical College of Wisconsin*; and Weilue He, *Michigan Technological University*

Paper: "Assessment of Magnesium Wire Coatings for Absorbable Medical Devices," *Magnesium Technology 2024*.

### Best Paper – Fundamental Research

William Caron, *Lockheed Martin*, and Steve C. Johnson, *Central Connecticut State University*

Paper: "Research Towards Sintering Improvement During Press and Sinter Processing of Mg and Mg Alloy Powders," *Magnesium Technology 2024*.

### Student Paper

Pedram Sotoudeh Bagha, Andres Larraza, and Mehdi Razavi, *University of Central Florida*

Paper: "Bioabsorbable Magnesium Composite Sheared at High Temperatures for Use in Bone Implants"

## Joint Division Awards

### EPD/LMD *Journal of Sustainable Metallurgy* Best Paper Award

Sakiko Kawanishi, *Kyoto University*; Hiroyuki Shibata and Sohei Sukenaga, *Tohoku University*; Seung-Hwan Shin, *Tohoku University and Hyundai Steel Co. Ltd.*; and Jun-ichi Takahashi, *Sumitomo Metal Mining Co. Ltd.*

Paper: "Microscopic Analysis of Magnetite Dissolution into Cu<sub>2</sub>S–FeS Matte with Gas Generation Using In Situ Observation," *Journal of Sustainable Metallurgy*, May 2023.

### LMD/EPD Energy Best Paper Award Professional

Qingsheng Liu and Qiqi Weng, *Jiangxi University of Science and Technology*

Paper: "High-Selective Lithium Extraction from Spent LiFePO<sub>4</sub> by Battery Roasting-Water Leaching Method," *JOM*, September 2023.

### Student

Daniel Lindbert, Iida Pankka, and Pekka Taskinen, *Aalto University*; and Justin Salminen, *Boliden Kokkola*

Paper: "Thermodynamic Modeling of Elemental Distributions of Trace Elements in Non-ferrous Iron Residue Hydrogen Reduction," *JOM*, September 2023.

# MATERIALS PROCESSING & MANUFACTURING DIVISION (MPMD) AWARDS

## MPMD Distinguished Scientist/Engineer Award

Hyoung Seop Kim, *SeAh Chair Professor, Pohang University of Science and Technology*

Citation: *For outstanding contributions to plastic deformation processing of powder, nanostructured, and heterogenous materials.*

"This recognition is a testament to the collaborative efforts and support of my colleagues, mentors, and students who have contributed to our advancements in the design, synthesis, processing, and performance of engineering materials. I am grateful for the opportunity to contribute to the field and look forward to continuing our work to achieve significant industrial applications and innovations."

## MPMD Distinguished Service Award



Paul Prichard, *Distinguished R&D Staff Member, Oak Ridge National Laboratory*

Citation: *An exemplar of the MPMD's mission. A true innovator, prolific organizer, effective leader, selfless mentor, and great friend to many.*

"TMS has provided me with a variety of opportunities to grow and interact with world-class scientists. I am humbled and grateful for this award but have been deeply rewarded by the relationships developed through the service of this vital community."

## MPMD ICME Industry Implementation Award



Magna International, c/o Randy Beals, *Senior Materials Engineer*

"Receiving this award is a tremendous honor, reflecting the hard work of my colleague, Dr. Xiaoping Niu, and myself, who utilize ICME methods to advance the development of new aluminum casting alloys. Our research at Magna International has focused on optimizing low-cost aluminum alloys for automotive components, achieving superior mechanical properties and sustainability. Being part of the TMS community, where I've actively participated in conferences and technical committees, has been invaluable for my professional growth and contributions to the field."

# STRUCTURAL MATERIALS DIVISION (SMD) AWARDS

## SMD Distinguished Scientist/Engineer Award



**Xiaozhou Liao, Professor, The University of Sydney**

**Citation:** For his pioneering contributions towards understanding deformation mechanisms and synthesis/processing-microstructure-properties relationships of structural materials via

*advanced electron microscopy techniques.*

"TMS is an influential research society that provides invaluable opportunities for collaboration, inspiration, and knowledge exchange. I am incredibly honored to receive this award from the TMS SMD, which validates the significance of the work I have been doing in materials science."

## SMD JOM Best Paper Award

**Jeffrey R. Becker Jr., Xuanxin Hu, Longfei Liu, and John Perepezko, University of Wisconsin-Madison; Ranran Su, Shanghai Jiao Tong University; and Hongliang Zhang, Fudan University**

**Paper:** "Phase Stability During High-Temperature Oxidation," *JOM*, November 2023.

## SMD Distinguished Service Award



**Srivatsan Tirumalai, Professor (Emeritus), The University of Akron**

**Citation:** For organizing 42 symposia and publishing 29 bound volumes covering advanced materials and composites, as well as his educational impact as a mentor and leader.

"Membership in TMS has enabled me to nurture, foster, and promote excellence in the execution of meaningful research with the objective of both enabling and ensuring the energetic and enthusiastic dissemination of the findings among the educated elite. This did provide the much-needed impetus and incentive for seeking excellence in enlightenment and related endeavors. The inspiration for seeking and promoting excellence in education enabled me to play a key role in the dissemination of knowledge through well-organized and orchestrated conferences and symposia (numbering 50-plus from 1991–2024) under the banner of TMS."

## CELEBRATE YOUR COLLEAGUES: AWARD NOMINATIONS DUE APRIL 1

Celebrate the accomplishments of your colleagues by nominating them for a 2026 TMS Award. These honors are also a great way to recognize exceptional service to the Society as well as their contributions to the professions.

**Submit your nomination before the deadline of April 1, 2025.**

Visit [www.tms.org/Awards](http://www.tms.org/Awards) to explore the many honors and awards available through TMS and to learn more about the nomination process and submission requirements. For additional information, contact Deborah Hixon, TMS Awards Program Manager, at [hixon@tms.org](mailto:hixon@tms.org).

Kaitlin Calva is an independent contributor and former editor of *JOM: The Magazine*.



# WAVES OF INNOVATION: WHAT TO EXPECT AT OTC 2025

KAITLIN CALVA

SINCE 1969



Amid a rapidly changing energy landscape, the Offshore Technology Conference (OTC) is at the epicenter of the industry. It's the place where decision-makers, engineers, and innovators across the energy sector come together to exchange ideas, discuss trends, and share best practices for offshore resources and environmental matters. As one of 12 sponsoring organizations, TMS strives to ensure that the technical program remains the place for global conversations on the future of the offshore industry. Through its volunteers, TMS helps to plan diverse and relevant technical sessions to shape a more vibrant energy future.

TMS representative to the OTC Board of Directors **Greg Kusinski**, Chevron, stated that TMS played a significant role in shaping the program for OTC 2025, scheduled for May 5–8, in Houston, Texas. Consisting of more than 450 presentations across 51 in-depth sessions, OTC 2025 promises to deliver high-quality programming that not only sparks conversation but assists in accelerating the development and transfer of interdisciplinary offshore technologies.

"OTC is going to be very exciting," Kusinski said. TMS has sponsored or co-sponsored three panel sessions, three keynote speaker sessions, and six technical sessions for this year's program. In addition to the formally sponsored programming, Kusinski noted that TMS has also been involved in planning the Opening Ceremony, which will include a plenary panel, awards ceremony, and a ribbon cutting event to

officially open the Exhibit Hall. Kusinski described the plenary session as "a very valuable event for all members who want to gain an understanding about energy markets and how the economies are shaping up, supplemented by a discussion of geopolitical forces that will shape the energy industry." This kick-off event will feature a conversation about the most pressing issues in today's landscape including policy, meeting our world's evolving energy needs, and the industry's public license to operate from four highly respected industry leaders: **Vicki Hollub**, president and chief executive officer (CEO), Oxy; **Erik Milito**, president, National Ocean Industries Association; **Jarand Rystad**, CEO, Rystad Energy; and moderator **Nancy Hungerford**, managing director, FTI Consulting, and former news anchor for CNBC International.

By attending OTC 2025, TMS members can gain a better understanding of a broad range of topics, such as market outlook, geopolitics that shape decisions, vision for technology from chief technology officers of major corporations, carbon management, and all aspects of the offshore oil and gas industry, as well as offshore wind. Additionally, attendees will benefit from a variety of networking opportunities. In 2024, OTC welcomed more than 1,300 exhibitors and more than 30,000 attendees from 107 countries, reinforcing OTC's status as the energy industry's most influential conference. Inside and outside of session rooms, along the Exhibit Hall floor, and at dedicated networking events, OTC 2025 will guarantee attendees

plenty of opportunities to make new connections and reunite with past acquaintances.

Help advance innovation and promote excellence in all aspects of the offshore energy industry at OTC 2025, scheduled for **May 5–8, 2025**, in Houston, Texas. Registration is now open—for more details on pricing and discounted member rates, visit the following website: [go.otcnet.org/JOM](http://go.otcnet.org/JOM).

OTC is sponsored by the following organizations: American Association of Petroleum Geologists; American Institute of Chemical Engineers; American Institute of Mining, Metallurgical, and Petroleum Engineers; Marine Technology Society; Society of Exploration Geophysicists; Society for Mining, Metallurgy & Exploration; American Society of Civil Engineers; American Society of Mechanical Engineers; IEEE Oceanic Engineering Society; Society of Naval Architects and Marine Engineers; Society of Petroleum Engineers; and The Minerals, Metals & Materials Society.

**Kaitlin Calva is an independent contributor and a former editor of JOM: The Magazine.**

## MORE FROM THE OTC SERIES



**OTC  
BRASIL  
2025**

Organized by OTC and the Brazilian Petroleum and Gas Institute (IBP)

**October 28–30, 2025**  
Rio de Janeiro, Brazil

*The Future of Deep-water Technologies:  
Connecting Oil & Gas  
Renewables*

Abstract Submission  
Deadline: **March 11,  
2025**

[otcbrasil.org](http://otcbrasil.org)



**OTC  
ASIA  
2026**

**March 31–  
April 2, 2026**  
Kuala Lumpur, Malaysia

**Save the Date—**  
Plan to join your  
colleagues in 2026!

[otccasia.org](http://otccasia.org)

## TMS AT OTC 2025

Over four days, OTC 2025 will offer technical presentations, panel discussions, and workshops covering a wide range of topics in offshore technology. TMS members can gain insights into the latest innovations, research findings, and industry trends. Take a closer look at select TMS-sponsored or co-sponsored presentations scheduled for OTC 2025:

### KEYNOTE PRESENTATIONS

- "Oil & Gas Industry's Strategies for Progress, U.S. Petroleum Market Evolution & Energy Autonomy, and Initiatives for Progressing to Net Zero," **Kamel Ben Naceur**, chairman and chief executive officer of DAMORPHE Inc.
- "Unlocking the Potential of Produced Gas: The Role of Blue Ammonia FPSO in Decarbonizing Offshore Oil and Gas Operations," **Alexander Brigden**, MISC Berhad
- "Beyond the Horizon: Innovating Offshore Decommissioning for a Sustainable Future," **Carloss Castilho**, Petrobras, and **Steve Louis**, Promethean Energy Corporation

### PANEL DISCUSSIONS

- Opportunities and Challenges for Financing Oil and Gas Projects in the Energy Transition
- The Geothermal Revolution
- Subsea Tiebacks: Increase Production, Lower Costs and Carbon

### TECHNICAL SESSIONS

- Revolutionizing Offshore Energy: Building Standardization Strategies for Emerging Energy Technologies
- Advanced Materials for Sustainable Offshore Technologies and to Enable Clean Energy Transition
- Pioneering Offshore CCUS: Technologies and Case Studies
- Innovations and Challenges in Recycling and Decommissioning of Offshore Structures
- New Technologies to Improve Facilities and Production Operations
- Enabling Subsea Residency Through Technologies for Smart Charging, RFID Applications, and Enhanced Navigation

**Editor's Note: the technical program details included in this article are accurate as of January 2025. For the most up-to-date information, visit [2025.otcnet.org](http://2025.otcnet.org).**



# TMS MEETING HEADLINES

Meeting information is current as of December 18, 2024. For the most recent updates on TMS-sponsored events, visit [www.tms.org/Meetings](http://www.tms.org/Meetings).

## TMS 2025 Annual Meeting & Exhibition (TMS2025)



March 23–27, 2025  
Las Vegas, Nevada, USA

### Join Your Colleagues

Emily Molstad, chief executive officer and co-founder of VALIS Insights, will deliver the all-conference plenary presentation, "From Finite to Infinite: Closing the Loop on Critical Minerals," on March 25 at the MGM Grand Las Vegas Hotel & Casino.

[www.tms.org/TMS2025](http://www.tms.org/TMS2025)

## TMS Specialty Congress 2025



June 15–19, 2025  
Anaheim, California, USA

### Discount Registration Deadline: April 30, 2025

The 7th International Congress on 3D Materials Science (3DMS 2025), co-located at TMS Specialty Congress 2025, seeks to provide the premier forum for presentations of current interest and significance to the three-dimensional (3D) characterization, visualization, quantitative analysis, modeling, and development of structure–property relationships of materials, as well as big data and machine learning issues associated with 3D materials science.

[www.tms.org/SpecialtyCongress2025](http://www.tms.org/SpecialtyCongress2025)

## TMS Fall Meeting 2025 at Materials Science & Technology (MS&T25)



September 28–  
October 1, 2025  
Columbus, Ohio, USA

### Abstract Submission Deadline: May 1, 2025

A complement to the TMS Annual Meeting held each spring, the TMS Fall Meeting at MS&T offers TMS members a chance to connect each year at a second large-scale, multidisciplinary meeting to explore the intersections of development, synthesis, and application.

[www.tms.org/TMSFall2025](http://www.tms.org/TMSFall2025)

## OTHER MEETINGS OF NOTE



### Extraction 2025 Meeting & Exhibition (Extraction 2025)

November 16–22, 2025  
Phoenix, Arizona, USA

[www.extractionmeeting.org/Extraction2025](http://www.extractionmeeting.org/Extraction2025)



### Materials in Nuclear Energy Systems 2025 (MiNES 2025)

December 7–11, 2025  
Cleveland, Ohio, USA

[www.tms.org/MiNES2025](http://www.tms.org/MiNES2025)



### TMS 2026 Annual Meeting & Exhibition (TMS2026)

March 15–19, 2026  
San Diego, California, USA

[www.tms.org/TMS2026](http://www.tms.org/TMS2026)

## CO-SPONSORED MEETINGS

### Offshore Technology Conference (OTC) 2025

May 5–8, 2025  
Houston, Texas, USA  
*Co-sponsored by TMS*

### OTC Brasil 2025

October 28–30, 2025  
Rio de Janeiro, Brazil  
*Co-sponsored by TMS*

### PRICM 12

August 9–13, 2026  
Gold Coast, Australia  
*Co-sponsored by TMS*

# HONORS

## FOR EVERY CAREER STAGE

Explore the many TMS awards available for established professionals, early career professionals, and students.



### UPCOMING DEADLINES:

**APRIL 1:** Most TMS award nominations due

**AUGUST 15:** Young Leader Professional Development Award nominations due

**MARCH 15:** Scholarship applications due



View the individual award pages for more details at  
[www.tms.org/awards](http://www.tms.org/awards)



# SUBMIT AN ABSTRACT

Abstracts Due May 1, 2025

# TMS FALL 2025

@MS&T  
MATERIALS SCIENCE & TECHNOLOGY

September 28–October 1, 2025 | Columbus, Ohio | #TMSFallMeeting

Join your TMS colleagues for the  
TMS Fall Meeting 2025 at  
Materials Science & Technology.

Submit your work to one of 35 TMS-sponsored symposia  
planned in the following subject areas:

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



**SHARE YOUR WORK TODAY!**

Scan the QR code or visit:

[www.tms.org/TMSFall2025](http://www.tms.org/TMSFall2025)