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

HIGHLIGHTS FROM TMS2024: WHERE MATERIALS PEOPLE MEET













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// about the cover



This month's issue of JOM: The Magazine takes you inside the TMS 2024 Annual Meeting & Exhibition, held March 3-7, 2024, in Orlando, Florida. Get an overview of the meeting and the exhibit, take a look inside the session rooms and networking events, meet contest winners and award recipients, and more in a series of four articles, starting on page 8. The conference photos in this issue were taken by David Rasel, TMS Senior Manager, Brand and Digital Assets, and Bob Demmler, TMS Visual Communications Coordinator, and the cover was designed by Demmler.



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 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.

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.

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IN THE FINAL ANALYSIS

"What happens here, only happens here." —New Las Vegas Tourism Slogan

For almost two decades, Las Vegas transcended within the cultural zeitgeist via its pervasive slogan, "What happens here, stays here" or the more popular variant, "What happens in Vegas, stays in Vegas." The new Las Vegas slogan eschews the promise of no consequences and instead suggests an experience unlike one that can be had anywhere else. That will certainly be true next March, when TMS2025 convenes at the MGM Grand Las Vegas.

TMS2025 will mark 30 years since our Society last held its marquee conference in Las Vegas. I don't think that we are gambling with our return as we received about 20% more symposium proposals for TMS2025 than any previous annual meeting. This suggests that the venue is a draw, but no venue has greater appeal than the simple fundamentals of the conference itself: Provide compelling networking opportunities with timely and high-quality technical programming and a meaningful exhibition. These are the year-in-year-out hallmarks of our event. An appealing venue does not hurt.

Is it a good bet that TMS2025 will live up to classical TMS standards? You know it's a sure thing that my answer will be "yes." So, to eliminate any bias from the Executive Director, I turned to dispassionate ChatGPT with two questions. The first was to identify the broad topics that are of greatest "importance to the global materials community." The second was to ask how closely the symposia proposed for TMS2025 align with those topics.

The response: "The symposia planned for TMS2025 closely match the topics of importance to the global materials community, reflecting current trends and challenges in the field." Ranked from top to bottom, the topics identified by ChatGPT are as follows. The parentheticals are planned TMS2025 programming areas that ChatGPT mapped to the "important" topics.

- 1. Sustainability and Eco-Friendly Materials (manufacturing; recycling)
- 2. Energy Materials (energy conversion, storage, and efficiency; green energy)
- 3. Additive Manufacturing (fundamental research to industrial applications)
- 4. Advanced Alloys and Composite Materials (development and characterization)
- 5. *Nanomaterials and Smart Materials* (materials with novel or responsive properties)
- 6. *Materials for Health and Biomedical Applications* (advancing healthcare technologies)
- 7. *Materials in Extreme Environments* (space, nuclear reactors, and high-performance industrial processes)
- 8. *Digital Materials Science and Informatics* (computational modeling, data informatics, and artificial intelligence)

A flawless analysis? No. It is clearly light on manufacturing (beyond additive), extractive metallurgy, lightweighting, and primary metals production. I reviewed the symposia, and these topics (among others) will be well represented. We can forgive ChatGPT the oversight as it is still less than two years old. Kids, right?

What we don't need an AI to tell us is this: What happens at the TMS Annual Meeting & Exhibition doesn't stay at the TMS Annual Meeting & Exhibition. Rather, it reaches everywhere and will influence what happens in materials science and engineering—upstream and down—months, years, and even decades from now.

If you want to see what happens, submit an abstract. The deadline is July 1, 2024.

James J. Robinson Executive Director



"TMS2025 will mark 30 years since our Society last held its marquee conference in Las Vegas. I don't think that we are gambling with a return as we received about 20% more symposium proposals for TMS2025 than any previous annual meeting."





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JOM TECHNICAL TOPICS



Find peer-reviewed technical articles covering the full range of minerals, metals, and materials science and engineering in the June issue of *JOM*: The Journal. Each issue features several technical topics presenting a series of related articles compiled by guest editors. A preview of June technical topics and articles are listed below. TMS members can log in to www.tms.org/Journals for full access to technical articles from *JOM*: The Journal and additional TMS journals.

Below is a sample of articles that will appear in the June issue, based on information available at press time. For the most up-to-date article listing, visit www.tms.org/JOM.

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Advanced Technology for Electronic Packaging and Interconnection Materials

Editor: Albert T. Wu, National Central University Sponsor: Electronic Packaging and Interconnection Materials Committee

"Abnormal Cu Grain Growth by External Stress on Electroplated Cu Films," **Jui-Sheng Chang**, et al.

"Whisker Nucleation by Slip-Assisted Grain Rotation During Thermal Cycling," **Congying Wang**, et al.

"Effects of Minor Ga Addition on Interfacial Reactions Between Sn-Ga Solders and Cu," **Chao-hong Wang**, et al. "Facets Formation of Ag3Sn Intermetallic in Sn-Bi-Ag Alloys: An EBSD and First-Principles Study," **Jieli Liao**, et al.

"Dissolution Behavior of Cu-2.0 wt.% Be (Alloy 25) and Cu-0.1 wt.% Fe (C19210) Substrates in Molten Sn-9 wt.%Zn Solder," **Andromeda Dwi Laksono**, et al.

"Power Cycling Reliability with Temperature Deviation of Pressureless Silver Sintered Joint for Silicon Carbide Power Module," **Won Sik Hong**, et al.

Alloy Microstructural Design for Wear Resistance

Editors: Darren Pagan, The Pennsylvania State University; and Saurabh Basu, The Pennsylvania State University Sponsors: Mechanical Behavior of Materials Committee and Advanced Characterization, Testing, and Simulation Committee

"Integrating Genetic Algorithms, Particle Swarm, and Neural Networks for Wear Optimization of AA7178 Matrix with Nano-SiC Particles," **Nikhil Bharat**, et al.

"Molecular Dynamics Simulation and Experimental Study of Brittle-Plastic Transition Behavior of Monocrystalline Ge at Micro- and Nano-scale," Liang Luo, et al.

"Effect of SiC and TiO₂ Nanoparticles on Machinability of AA7178 Metal Matrix Composite: A Comparative Analysis Using Taguchi and GRA Approaches," **Nikhil Bharat**, et al. "Effect of Ultrasonic Rolling Surface Technique on the Surface Microstructure and Properties of CuTi Alloys," Xiang Wang, et al.

"Lubricated Wear Properties of Zn-30Al-3Cu-Si Alloys," **Temel Savaşkan**, et al.

"Investigating the Microstructure and Wear Properties of AISI 4140 Steel Clad with WC-Ti Composite Particles Via Gas Tungsten Arc Welding," **M. Hajian**, et al.

"Evolution of Surface Roughness of Wrought and Additively Manufactured Inconel 718 during Centrifugal Disc Finishing," **Mustafa Rifat**, et al.

Nanostructured Materials in Extreme Environments

Editors: Haiming Wen, Missouri University of Science and Technology; and Youxing Chen, University of North Carolina, Charlotte Sponsor: Nanomechanical Materials Behavior Committee

"Plastic Deformation in Aluminum Columnar Nanograins," **Shujing Dong**, et al.

"Ion Implantation-Induced Plastic Phenomena in Metallic Alloys," **Patrick H. Warren**, et al.

"Manufacturing ODS steels from GARS Powders by Friction Consolidation and Extrusion," **Dalong Zhang**, et al.

"Enhanced Radiation Damage Tolerance of Amorphous Interphase and Grain Boundary Complexions in Cu-Ta," **Doruk Aksoy**, et al. "Grain Boundary Precipitation and Self-Organization in Two-Phase Alloys under Irradiation: Phase Field Simulations and Experiments in Al-Sb," **Gabriel F. Bouobda**, et al.

"Mechanical Behavior and Thermal Stability of Nanocrystalline Metallic Materials with Thick Grain Boundaries," **Ke Xu**, et al.

Quantifying Rate Sensitive Deformation Measured from Continuous Indentation

Editors: A.A. Elmustafa, Old Dominion University; and D.S. Stone, University of Wisconsin-Madison

"Strain Rate Sensitivity Measured from Different Continuous Macro-indentation Methods," **A.R. Geranmayeh**, et al.

"On the Strain Rate Sensitivity Measured by Nanoindentation at High Strain Rates," **B.L. Hackett**, et al.

"A Well-Posed Definition for Plastic Strain Rate in Indentation," **D.S. Stone**, et al.

"Viscoelastic Moduli and Path-dependent Hardness Across Four Decades of Timescale in Semicrystalline Polymers from Berkovich Nanoindentation," Joseph E. Jakes, et al.

Uncertainty Quantification and Design under Uncertainty for Metallic Systems

Editor: Pinar Acar, Virginia Polytechnic Institute and State University Sponsor: Integrated Computational Materials Engineering Committee

"A Novel Image Artifact Removal Scheme for Phase Percent Quantification of Dual-Phase Steel Microstructures," **Tanusree Dutta**, et al.

"Sensitivity Assessment on Homogenized Stress–Strain Response of Ti-6Al-4V Alloy," **Mohamed Elleithy**, et al. "Uncertainty Analysis for Ferromagnetic-Paramagnetic Phase Transition Behavior of Magnetic Materials," **Zekeriya Ender Ege**r, et al.

"Multi-fidelity Uncertainty Quantification for Homogenization Problems in Structure-Property Relationships from Crystal Plasticity Finite Elements," **Anh Tran**, et al.

Journal of Electronic Materials Seeks Submissions for Topical Collection



The *Journal of Electronic Materials*, published by TMS, is currently seeking submissions for the topical collection High-Energy Battery Materials.

This collection focuses on the most recent progress on high-energy electrode materials and battery systems for electrochemical energy storage and present a broad overview on new synthetic methods, unique cell structure, as well as novel characterization techniques on mechanism.

> Submit your work through Editorial Manager at www.editorialmanager.com/jems and select article type "High-Energy Battery Materials." Author instructions and additional details are available on the journal website: https://link.springer.com/journal/11664

The submission deadline is December 31, 2024.

TMS MEMBER NEWS



Share the Good News!

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

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TMS Members Elected to the NAE

TMS congratulates its distinguished members who have been elected to the U.S. National Academy of Engineering (NAE). These individuals are two of the 2024 class of 114 members and 21 international members. Election to the NAE is among the highest professional distinctions for engineers, and honors those who have made "outstanding contributions to engineering, research, practice, or education, including, where appropriate, significant contributions to the engineering literature" and to "the pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

The following TMS members will be formally inducted during a ceremony at the NAE's annual meeting in Washington, D.C., in September 2024.



Irene Beyerlein, the Mehrabian Interdisciplinary Professor in the College of Engineering at the University of California, Santa Barbara, was elected "for methodologies predicting the mechanics of complex engineering materials to improve their stability and strength." A TMS member since 2005, Beyerlein has received a number of awards for her work, including the 2018 Materials Processing & Manufacturing Division Distinguished Scientist/Engineer Award, 2019 Structural Materials Division *JOM* Best Paper Award, 2019 Brimacombe Medal, 2019 AIME Champion H. Matthewson Award, 2020 Light Metals Division (LMD) Magnesium Technology Best Paper Award – Fundamental Research, 2021 LMD Magnesium Technology Award – Best Poster, and 2023 TMS Fellow Award.



Mark Hersam was elected "for the synthesis, purification, functionalization, and application of lowdimensional nanoelectronic materials." Hersam is the Walter P. Murphy Professor of Materials Science and Engineering at Northwestern University and director of the Northwestern University

Materials Research Science and Engineering Center. He has also founded two companies, NanoIntegris and Volexion.

Hersam has been a TMS member since 2002 and received the 2006 AIME Robert Lansing Hardy Award. In 2018, he was elected a fellow of the National Academy of Inventors.

Persson Elected to Royal Swedish Academy of Sciences



In February 2024, TMS member Kristin Persson was elected as a foreign member of the Royal Swedish Academy of Sciences in the 2024 Class for Chemistry. Persson is currently the Daniel M. Tellep Distinguished Professor of materials science and engineering at University of California, Berkeley, where

she directs the Materials Project. She is also a senior faculty scientist at Lawrence Berkeley National Laboratory, where she is the director of the Molecular Foundry, a national user facility managed by the U.S. Department of Energy. During her TMS membership, Persson has been on the international advisory committee for the First World Congress on Artificial Intelligence in Materials & Manufacturing (AIM 2022) and has been a member of the lead expert study team for the technology accelerator study, *Employing Artificial Intelligence to Accelerate Development and Implementation of Materials and Manufacturing Innovations.*

She is the 2023 recipient of the TMS Cyril Stanley Smith Award and the 2017 TMS Early Career Faculty Fellow Award. Persson's work has also earned her awards from other organizations, including 2023 American Association for the Advancement of Science Fellow, 2023 Materials Research Society Fellow, and 2021 American Physical Society Fellow.

Hunyadi Murph Named Inventor of the Year

Simona Hunyadi Murph, senior fellow and technical liaison at Savannah River National Laboratory (SRNL), was selected as the 2023 SRNL/Battelle Inventor of the Year. Bestowed during the Battelle Celebration of Solvers, the award recognizes inventors who have made significant scientific or engineering contributions that have important societal or financial impact while advancing the reputation of Battelle as a leading provider of innovative solutions to the world's most pressing problems. With more than 130 publications, more than 6,400 citations, and 19 issued or pending patents, Hunyadi Murph's work on shape-selective and hybrid nanomaterials, as well as accelerating the discovery of new materials, has made an impact.

A TMS member since 2015, Hunyadi Murph has actively participated in many aspects of the Society. She has served in various leadership roles of the Education, Public & Governmental Affairs, Program, Energy Conversion & Storage, and Composite Materials committees. She was a member of the lead expert study team for the 2022 TMS technology accelerator study, *Accelerating Research and Technological Development in the Additive Manufacturing of Energy-Related Functional Materials*, and was a speaker at a webinar event of the same name. Most recently, Hunyadi Murph was awarded the 2023 TMS Brimacombe Medal for her "cutting-edge scientific and engineering innovation of anisotropic and shapeselective nanomaterials," and "extraordinary effort in developing the next generation of leaders and dedicated service to TMS."

Simona Hunyadi Murph, left, with Mark Peters, Executive Vice-President for National Laboratory Management and Operations at Battelle, during a ceremony honoring her upon receipt of the 2023 Savannah River National Laboratory/Battelle Inventor of the Year Award.



In Memoriam

TMS offers its condolences to the families, friends, and colleagues of the following members:

Robert E. Brown

Robert Evans Brown passed away on March 24, 2024. Brown held a B.S. in metallurgical engineering from Michigan Technological University and worked as a technical engineering specialist at Fluor, after which he created the Magnesium Assistance Group Inc. to begin consulting and continue his writing and publishing endeavors.

An active TMS member since 1982, Brown had been a member of the TMS Magnesium Committee since its inception in 1998. In 2000, he was honored as the keynote speaker at the first Magnesium Technology session held during the TMS 2000 Annual Meeting & Exhibition. The International Magnesium Association awarded Brown a Lifetime Achievement Award in 2007.

Christopher Twigge-Molecey

Christopher Twigge-Molecey passed away on January 8, 2024. He studied mechanical sciences at Cambridge University and fluid mechanics at the University of Toronto (U of T). After earning his Ph.D., he worked at Hatch for five decades and as an adjunct professor of mechanical engineering at U of T, where he mentored students.

A TMS member since 1976, Twigge-Molecey was a member of the Education Strategy Development Committee and co-chaired the Sustainability in Materials Education Subcommittee. He was also actively involved in the Metallurgy and Materials Society of the Canadian Institute of Mining, Metallurgy, and Petroleum, serving as president of both organizations. In 2007, he chaired the International Copper-Cobre Conference, of which TMS is an organizing society.

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TMS2024: WHERE MATERIALS PEOPLE MEET

Kelly Zappas

A plenary panel discussion highlighting critical materials challenges. A biennial display of impressive student-forged blades. Symposia honoring leaders in their fields and addressing new frontiers of research. A busy, activity-filled exhibit hall. Well-attended networking events. High-spirited competitions.

The TMS 2024 Annual Meeting & Exhibition (TMS2024) included all of these elements and more. A total of 4,115 minerals, metals, and materials scientists, engineers, and students from around the world gathered March 3–7 in Orlando, Florida, for TMS's biggest event of the year. TMS2024 offered attendees unique opportunities to connect with those from related research areas, learn interesting industry perspectives, hear new research developments on a broad range of topics, and receive recognition for achievements. It also provided plenty of time and space for attendees to meet, collaborate, share ideas, and build lasting professional relationships. The June issue of *JOM: The Magazine* will look at some of the highlights of this year's meeting in a series of four articles that explore the overall conference, technical sessions, social and networking events, and poster competition winners from this year's meeting. (More extensive coverage of the TMS Bladesmithing Competition will appear in a future issue of the magazine.)

THE WORLD COMES HERE

153rd Annual Meeting & Exhibition

Plan to join your TMS colleagues when we reconvene next year for the TMS 2025 Annual Meeting & Exhibition (TMS2025), to be held in Las Vegas, Nevada, March 23–27. Visit www.tms.org/TMS2025 today to reserve your room at the conference venue the MGM Grand Las Vegas Hotel & Casino—and to submit your abstract for the TMS2025 technical program. Abstracts are due July 1, 2024.

TMS2024 BY THE NUMBERS

ATTENDANCE					TECHNICAL PROGRAM			
4,115	1,315	65	58	3,140	576	102	453	
Total Attendees	Student Attendees	Exhibiting Companies	Countries Represented	Oral presentations	Poster presentations	Symposia presented	Sessions presented	

INSIDE THE TMS2024 EXHIBIT HALL



The TMS2024 Exhibit Hall featured 65 exhibiting companies demonstrating their products and services, from Monday, March 4, through Wednesday, March 6. Two networking events—an opening reception on Monday evening and a happy hour on Tuesday evening—gave attendees an opportunity to gather for food, drinks, and networking with exhibitors and each other. Each event featured a unique poster session highlighting different topics. Poster presenters were on hand each night to discuss their work with attendees. Also on display in the exhibit hall this year were entries in the 2024 TMS Bladesmithing Competition. A total of 24 blades were on display in cases for attendees to browse during exhibit hours.

Learn how your company can participate as an exhibitor at the TMS 2025 Annual Meeting & Exhibition (TMS2025), scheduled to be held March 23–27 at the MGM Grand Las Vegas Hotel & Casino in Las Vegas, Nevada. Contact Gavin McAuliffe, TMS Exhibit Manager, Corcoran Exhibitions, at gavin@corcexpo.com for more information.

PLENARY PANELISTS DISCUSS CRITICAL MATERIALS



From left to right: 2023 TMS President **Brad Boyce** moderates the TMS2024 Plenary Session with panelists **Thomas Lograsso**, Ames National Laboratory; **Robert Miles**, Momentum Technologies, Inc.; and **Helena Khazdozian**, U.S. Department of Energy.

Critical materials present a complex set of challenges to the minerals, metals, and materials communities. To address this complexity, TMS invited panelists representing industry, academia, and government to provide their perspectives at the session **Translating Scientific Discovery into Impactful Innovation to Solve Critical Materials Challenges**, the TMS2024 All-Conference Plenary Session.

"As scientists and engineers, as TMS members, and as citizens of the world, it's urgent for us to consider the resources we have available to us and how we use them to greatest effect," said moderator **Brad Boyce**, 2023 TMS President, in his introduction to the event. The session featured brief talks by **Thomas Lograsso**, director of the Critical Materials Innovation (CMI) Hub at Ames National Laboratory; **Robert Miles**, chief technology officer and co-founder of Momentum Technologies, Inc.; and **Helena Khazdozian**, cochair of the Critical Materials Collaborative (CMC), Advanced Materials & Manufacturing Technologies Office, Energy Efficiency & Renewable Energy at the U.S. Department of Energy (DOE).

Following their introductory talks, the three invited panelists spent the second half of the session answering questions submitted by audience members.

Lograsso opened the conversation by giving an introduction to the CMI hub, a DOE Innovation Hub led by Ames Laboratory that seeks to accelerate innovative scientific and technological solutions to develop resilient and secure supply chains for rare-earth metals and other materials critical to the success of clean energy technologies. The hub, Lograsso said, has created an innovative ecosystem, a network of team members who work collaboratively on their own projects and across the hub.

He shared a few examples of successful technology transitions and the common factors that led to their success. These factors include understanding the path a technology takes to deployment in the manufacturing sector; developing a stable, multidisciplinary team for maturing that technology and for scaling it; and understanding how to insert that technology into a supply chain or into the value chain in a non-disruptive way.

"Partnerships are vital to success—a balance of science and technology," said Lograsso. "It's not just about the technology; it's about the ecosystem around that technology."

The second presenter, Miles, represented the industry perspective. His company, Momentum Technologies, spun out of the CMI and focuses on sustainable recycling of lithium-ion batteries, industrial materials, and rare earth metals. His expertise, he said, is working with startups. "When you bring an invention to market, you need to spend time—ample time—to find the right market for what you're doing," said Miles, who cautioned that your first guess is not always correct. He described the technology that he developed through the CMI as a low-cost, modular scalable system to recycle lithium-ion batteries. "It was kind of a challenging industry for a number of different reasons. We initially started out focusing on rare earth elements, but it turned out the market just wasn't there, so we pivoted to lithium-ion batteries, and it turned out much more favorably."

The third panelist, Khazdozian, provided a government perspective on the issue. At the DOE, she said, they are part of a broader government strategy to build secure and resilient supply chains for critical materials. "This problem is too big for one office or one agency to tackle," said Khazdozian. "The CMC is the connective tissue, maximizing impact across DOE's critical materials research and development portfolio."

Their group has to work as connectors in other ways, too, she said. "We can be conveners. That's a unique role of the government. We can connect different types of innovators."

Following these presentations, the panelists fielded audience questions on funding sources for critical materials, new breakthroughs on the horizon, scaling technologies, managing teams, and more.

TMS2024 PROCEEDINGS





2023 TMS President **Brad Boyce** presents copies of proceedings publications to (pictured, left) *Light Metals 2024* Editor **Sam Wagstaff** at the TMS Aluminum Committee meeting held at TMS2024 and (pictured, right) *Magnesium Technology 2024* Lead Editor Aeriel Leonard at the meeting of the TMS Magnesium Committee at TMS2024.

Nine TMS2024 conference proceeding publications were made available for free online access to registrants. These volumes are also now available for purchase in hard copy or electronic format through the TMS Bookstore. TMS members are eligible for 40% discounts on these and other TMS proceedings. Log in to <u>www.tms.org/Bookstore</u> to access member discount codes.

PROFESSIONAL DEVELOPMENT AT TMS2024

On Sunday, March 3, TMS held two professional development events in conjunction with TMS2024 that allowed participants to take a more in-depth look at a particular topic. The full-day course **Hydrogen as Energy Carrier and Reductant in Metallurgical Applications** was a new offering organized by the TMS Pyrometallurgy Committee. The half-day **Metal Additive Manufacturing Processes Workshop** was an updated version of the additive manufacturing workshop that has been organized by TMS in conjunction with a number of past conferences.



Pictured, top: Participants in the Hydrogen course engage in discussion. Pictured, bottom: Halvor Dalaker, SINTEF, was an organizer and instructor for the Hydrogen course.

SRINI CHADA TAKES OFFICE AS 2024 TMS PRESIDENT

At each year's TMS Annual Meeting, leadership transitions take place on the TMS Board of Directors, and the Society's new president is installed.

Srini Chada of General Dynamics Mission Systems took office as 2024 TMS president and took the opportunity to reflect on the role that TMS has played as his "home Society" and how he can share that experience with others. "As the next president of TMS, I will work to grow our membership by encouraging student members, first-time attendees, and occasional participants to join and swell our ranks," said Chada during his speech at the TMS-AIME Awards Ceremony at TMS2024. "I want them all to experience firsthand what I have gained in the past three-and-a-half decades as a TMS member."

Previously, Chada was a principal engineer at Amazon-Project Kuiper, and, prior to that, he held senior-level managerial, engineering, and research positions in the fields of electronics reliability, failure analysis, materials science, and metallurgy at Stryker, Whirlpool, Medtronic, Jabil, Honeywell Electronic Materials, and Motorola. Previously, Chada was chair of the Electronic Packaging and Interconnection Materials Committee for TMS. A member of TMS since 1988, Chada served on the TMS Board of Directors for two terms as the chair of the TMS Programming Committee and chair for the TMS Functional Materials Division (FMD). Additionally, he was the chair of the TMS Materials and Society Committee, representative to the TMS Publications Coordinating and Programming committees for the FMD, and a JOM advisor.

The 2024 TMS Board of Directors is pictured here. **Front row, left to right:** James J. Robinson, Dan Miracle, Saryu Fensin, Alexis Lewis, Viola L. Acoff, Jonathan Madison, and Suveen Mathaudhu. **Back row, left to right:** Paul Mason, Edward Williams, Michael Titus, Srini Chada, Brad Boyce, Kester Clarke, and Robert Maass.



Society leadership transfers from 2023 TMS President **Brad Boyce** (right) to 2024 TMS President **Srini Chada** (left) during the TMS-AIME Awards Ceremony at TMS2024.

As Chada's term began, Brad Boyce of Sandia National Laboratories concluded his term as 2023 TMS president.

"TMS is about people," said Boyce, addressing the audience at the TMS-AIME Awards Ceremony. He brought his year as president to a close by thanking the volunteers who make this organization work. "Your energy and insight is what makes TMS strong. I look forward to seeing where you will take this society next. And I thank you for entrusting me to serve as the TMS president."

The change in leadership also included the addition of two new members to the TMS Board of Directors. **Dan Miracle** of the U.S. Air Force Research Laboratory moved into the role of vice president for 2024 and will serve as president of the Society in 2025. **Robert Maass** of the Federal Institute of Materials Research and Testing (BAM) in Germany took on the role of Program Director on the TMS Board of Directors.





More than 3,700 oral and poster presentations were delivered at over 100 symposia during the TMS 2024 Annual Meeting & Exhibition (TMS2024), March 3–7, in Orlando, Florida. Included in these were keynote sessions on topics like additive manufacturing and light metals, symposia honoring distinguished members of the community, and award lectures delivered by leaders in the field. The following pages offer a look at a selection of these sessions.

LIGHT METALS KEYNOTE SESSION

Six invited keynote speakers kicked off Light Metals programming at TMS2024 in a special session addressing **Decarbonization of Alumina and Primary Aluminum Production to be the Metal of Choice.** The session took a broad view of the topic, with industry-focused presentations on decarbonizing alumina production at Almatis, decarbonizing existing aluminum operations at Emirates Global Aluminium, and reducing the environmental impact of aluminum used by Apple. Other speakers discussed aluminum smelters as catalysts for the transition to cleaner energy, looked at the impact of inert anode technology on aluminum and other metals production, and provided an overview of the market for low-carbon aluminum.

Pictured, clockwise from top left, are Light Metals Keynote speakers: **Donald Sadoway**, Massachusetts Institute of Technology; **James Yurko**, Apple; **Alessio Scarsella**, Almatis GmbH; and **Yasemin Esmen**, Fastmarkets. Additional presenters included **Abdalla Alzarooni**, Emirates Global Aluminium, and **Martin Iffert**, Martin Iffert Consulting Gmbh.

The event, sponsored by Springer Nature, ended with a panel discussion and an audience questionand-answer session with all six speakers. The keynote session marked the opening of Light Metals programming at TMS2024, which included a total of nine symposia.



MAGNESIUM TECHNOLOGY KEYNOTE TALKS

Using only seawater and brine, a new electrolytic process can produce magnesium without mining, which could open the door to more widespread use of the metal in automotive applications, according to **Alexander Grant** (pictured, left), chief executive officer of Magrathea. Grant discussed the company's work at the keynote presentation for the Primary Production, Recycling, and Modeling session of the **Magnesium Technology 2024** symposium.

Magnesium Technology 2024 featured six technical sessions at TMS2024. In addition to Grant, four other keynote speakers were invited to deliver opening talks at sessions, including: **Petra Maier**, University of Applied Sciences Stralsund; **Ashley Bucsek**, University of Michigan; **Maria Teresa Perez Prado** (pictured, top right), IMDEA Materials Institute; and **Jian-Feng Nie** (pictured, bottom right), Monash University.



ADDITIVE MANUFACTURING KEYNOTE SESSION



A total of 13 symposia on additive manufacturing were held at TMS2024. The Additive Manufacturing Keynote session, sponsored by Springer Nature, offered an opportunity for participants from all of these symposia to come together and hear talks from invited speakers, including the 2024 TMS Young Innovator in the Materials Science of Additive Manufacturing Award recipient, Minh-Son Pham (pictured, left), Imperial College London. As part of his award, Pham delivered the presentation, "Meta-crystals: Synergistic Combination of Materials Science and Additive Manufacturing," to close out the session. Chase Cox (pictured, bottom right), MELD Manufacturing Corporation, opened the session, followed by Dierk Raabe, Max-Planck Institute, and Cindy Waters (pictured, top right), Naval Surface Warfare Research Center Carderock Division.

HONORARY SYMPOSIA

Materials Science for Global Development—Health, Energy, and Environment: A Structural Materials Division Symposium in Honor of **Wole Soboyejo** (pictured, left) began with Soboyejo providing a personal perspective on his work, ranging from affordable materials for sustainable housing to biomaterials in cancer research. "I was not the expert in any one of these areas," he said, "but I brought together people from multiple disciplines, and they all brought different perspectives to the problems. What I learned from this was to just focus on people, focus on ideas and everything else happens."



Soboyejo's honorary symposium was one of five held at TMS2024, each one highlighting a different technology area related to the career of a distinguished TMS member, while also bringing together the friends, family, and colleagues of the honoree. The **Anil K. Sachdev** symposium, sponsored by the TMS Light Metals Division (LMD) and focused on materials innovations for lightweighting, opened with an introduction by Sachdev, who recognized some of his excellent students before introducing the first speaker, **Alan Taub**, with whom Sachdev said he had traveled many thousands of miles over the years. Taub's talk focused on progress in automotive lightweighting. The TMS Functional Materials Division recognized two individuals with symposia at TMS2024: **Victorino Franco**, Universidad de Sevilla, was honored with a symposium on advanced soft magnets and magnetocaloric materials, while **Uday B. Pal**, Boston University, was honored with a symposium on hightemperature electrochemistry.

Process Metallurgy and Environmental Engineering was the subject of the TMS Extraction & Processing Division symposium held in honor of **Takashi Nakamura**, Tohoku University. This twoday symposium featured sessions on non-ferrous smelting, battery recycling, and new reactions and processing, as well as a dinner in honor of Nakamura.



Pictured, left: **Anil K. Sachdev** speaks at the LMD symposium held in his honor. Pictured, right: **Uday B. Pal**, center, attends a dinner event held in conjunction with his honorary symposium.

ACTA MATERIALIA SYMPOSIUM

How can we use materials science to benefit society? Could we attract more students to MSE? These are a few of the questions that award recipients posed at the TMS2024 Acta Materialia Symposium, which honored four TMS members with prestigious Acta Materialia Awards. The following individuals delivered talks at the symposium (pictured, from left to right):

- Acta Materialia Mary Fortune Global Diversity
 Lecture: Lynnette Madsen, Cornell University
- Acta Materialia Gold Medal Lecture: Kazuhiro Hono, National Institute for Materials Science (NIMS)
- Acta Materialia Hollomon Award for Materials and Society: Iver Anderson, Ames National Laboratory
- Acta Materialia Silver Medal Lecture: Jean-Philippe Couzinie, University Paris Est-Créteil



NIX AWARD SYMPOSIUM

Tresa Pollock, University of California, Santa Barbara, gave the keynote presentation, "Designing Fatigue Resistant Structural Materials," as the 2024 William D. Nix Award recipient during the Nix Award and Lecture Symposium. Pollock stated how excited she was to join the Nix academic family through this award and lecture. In recognition of his work and legacy in the field, she acknowledged Nix, saying, "Bill, thank you for all the science and all the wonderful people you've trained." Pollock's talk opened a session of invited speakers that also included Peter Gumbsch, Fraunhofer Institute for Mechanics of Materials IWM; Michael Uchic, Air Force Research Laboratory, Wright-Patterson AFB; Irene Beyerlein, University of California Santa Barbara; and Kevin Hemker, Johns Hopkins University.



MORE AWARD LECTURERS FROM TMS2024







George Demopoulos, McGill University, delivers the talk, "Advanced Hydrometallurgical Process Innovations: Clean Environmental Applications and Sustainable Electrochemical Energy Materials and Technologies" as the Extraction & Processing Division Distinguished Lecturer.

Yunzhi Wang, Ohio State University, received the 2024 William Hume-Rothery Award and, as part of the award, delivered the talk "Deformation Pathway Engineering and Compositionally and Structurally Modulated Alloy Design" at TMS2024.

Hamish Fraser (right), Ohio State University, accepts the Institute of Metals/Robert Franklin Mehl Award from 2023 TMS President **Brad Boyce** (left). He delivered the lecture "Optimization of Microstructure of Titanium Alloys Processed using Additive Manufacturing" at TMS2024 as part of the award.

FRONTIERS OF MATERIALS SYMPOSIA

Two Frontiers of Materials symposia, organized by individuals selected through TMS's competitive Frontiers of Materials awards program, were presented on hot or emerging technical topics in materials at TMS2024. In addition to inviting speakers and organizing their symposia, each of the award recipients delivered keynote talks on their selected topics.

Pinar Acar (pictured, left), Virginia Polytechnic Institute and State University, delivered the "Inverse Design for Crystal Plasticity Model Identification via Physics-Informed Neural Networks" keynote during the Physics-Informed Machine Learning for Modeling and Design of Materials and Manufacturing Processes session. During the Novel Ceramics Processes for Nuclear Applications session, **Takaaki Koyanagi** (pictured, right), Oak Ridge National Laboratory, gave the keynote talk, "Development of Next Generation SiC Composites for Nuclear Energy."



ELECTRODE TECHNOLOGY FOR ALUMINUM PRODUCTION

Following a day of presentations on anode raw materials and anode production, the Electrode Technology for Aluminum Production symposium held a special workshop session on step changes required for carbon anodes. This event featured a series of panel discussions, where invited panelists delivered short presentations, followed by highly interactive discussions among audience members, moderators, and panelists. The session was sponsored by the TMS Aluminum Committee.



FURNACE TECHNOLOGY SESSIONS

The Advances in Pyrometallurgy: Furnace Containment symposium consisted of three technical sessions and one poster session. Two presentation sessions were held on the topics of furnace design and operations and refractories. The third session was a panel discussion on furnace design lessons learned featuring (pictured, from left to right): **Harman Oterdoom**, Butterbridge; **Avi Nanda**, Freeport-McMoran; **Allan MacRae**, MacRae Technologies; **Lloyd Nelson**, LR Nelson Consulting; and **Stuart Nicol**, Glencore Technology.





Opportunities to meet collaborators, build professional networks, and talk with people from different areas of technical expertise are among the many reasons attendees cite for coming back to the TMS Annual Meeting & Exhibition year after year. These pages provide a look at the networking events held at the TMS 2024 Annual Meeting & Exhibition (TMS2024), March 3–7 in Orlando, Florida, that created these types of opportunities at this year's event.

TMS-AIME AWARDS CEREMONY



When he first organized a symposium at the TMS 2004 Annual Meeting & Exhibition, **Roger Narayan**, University of North Carolina at Chapel Hill/ North Carolina State University, said he brought biomaterials researchers from

around the world to a TMS meeting. Upon accepting his 2024 TMS Fellow Award at the **2024 TMS-AIME Awards Ceremony**, Narayan said, "It was really exciting to see that cross talk between the biomaterials community and have it grow within TMS. Of course, now we have a half dozen symposia on biomaterials at the TMS Annual Meeting and MS&T, so it's been great to see biomaterials grow as a focus area in the Society."



"I'd like to thank TMS for providing us such a vibrant society where we can exchange our ideas." —Yunzhi Wang, 2024 TMS Fellow



John Agren, Royal Institute of Technology, looked back at his 40-year journey with TMS as he accepted his 2024 Fellow Award, noting that, through the Society, he's had the privilege to follow a number of emerging technologies,

including in computational methods and integrated computational materials engineering. "All of this has been possible by attending TMS meetings and joining those activities," he said.

The TMS Fellow Award is the highest honor the Society bestows. In all, seven individuals were inducted into the 2024 Class of TMS Fellows, and more than 50 additional individuals were honored with awards ranging from student scholarships and early-career recognition to those honoring mid-career accomplishments and long-term achievements.

The ceremony was held on Wednesday evening, March 6, with awards presented by TMS; the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME); and Acta Materialia. Award recipients and their guests gathered for a reception prior to the ceremony to celebrate. A recording of the full awards ceremony, including speeches by the incoming and outgoing TMS presidents, can be viewed at www.youtube.com/ChannelTMS.

TMS COMMITTEE MEMBERSHIP VOLUNTEER FAIR

Being a part of the TMS Public & Governmental Affairs Committee is a great way to improve your nontechnical and persuasive writing skills and gives you the opportunity to influence TMS positions on important issues, according to **Richard Otis**, the committee's vice chair. Participating on the TMS Accreditation Committee lets you see how university programs are run and offers a chance to give back to the community, said committee vice chair **Pello Uranga**. And the TMS Bladesmithing Committee is great if you want to work directly with students who are excited and passionate about their studies, said committee member **Michael West**.

TMS Functional Committees like these—which are different from technical committees that focus on particular technology areas—offer distinct benefits to members who serve on them, but what are those benefits and how can you get started as a volunteer?

To answer that guestion, the TMS Professional Development Committee hosted a special session, TMS Committee Membership Volunteer Fair: Your Nucleation Site for Career Growth, at TMS2024. After a brief introduction about the benefits of involvement with TMS, led by 2023 TMS President Brad Boyce and TMS Professional Development Committee Chair Emily Kinser, participants met with members of TMS Functional Committees to discuss how and why to get more involved in these groups, including the three Functional Committees that are open to all TMS members: the Diversity, Equity, and Inclusion Committee; the Emerging Professionals Committee; and the Bladesmithing Committee. You can view a complete list of TMS Functional Committees at www.tms.org/FunctionalCommittees.



Tim Rupert, who served as chair of the TMS Program Committee from 2020 to 2024, describes the benefits of working with this committee to volunteer fair participants.

LAUNCH YOUR CAREER WORKSHOP

"Most people don't mind being asked for help the worst thing they can do is say no," said **Xun "Wendy" Gu** (pictured, top photo), Stanford University, at the **TMS Launch Your Career Workshop**, sponsored by the TMS Emerging Professionals Committee at TMS2024. Gu (pictured, speaking) went through all aspects of the job application process from figuring out what positions to apply for and building your resume/CV to interviewing and negotiating an offer. "All the preparation that you do will inform what you apply for," she said, encouraging audience members to focus their search rather than apply too widely. And when it comes time to interview, she advised, "Tell the employer what you can do for them ... promote yourself."

She also encouraged listeners to use their network, which is "really easy to say, but not so easy to do," she noted. However, she reminded them that "your peers are your best resources."

Following Gu's presentation, four panelists from academia, government, and industry answered attendees' questions. The speakers described what a typical day looks like in each of their sectors, discussed what the work-life balance is for each, and offered tips for how to transition from being a student to a working professional. The panelists included (pictured from left to right) **Alex Baker**, Lawrence Livermore National Laboratory; **Vinamra Agrawal**, Auburn University; **Charity Steele**, RHI Magnesita; and **Jonathan Madison**.

You can view a recording of the full presentation and panel discussion at www.youtube.com/ ChannelTMS.



EMERGING PROFESSIONAL TUTORIAL LECTURE



Atieh Moridi, Cornell University, delivered the Emerging Professionals Tutorial Lecture as one of the 2024 recipients of the Early Career Faculty Fellow Award. Her talk, entitled "The Power of Instability: Non-Equilibrium Dynamics in Additive

Manufacturing and Professional Development," drew parallels between obstacles in research problems and life. She encouraged the students and young professionals in attendance to "view obstacles as an opportunity to grow" and to not let themselves be held back by such difficulties. "Resilience and selfbelief can help pave the way to a successful career," she counseled. She encouraged attendees to think outside of the box, because "bending the rules can lead to more innovation."

2024 TMS MATERIALS BOWL

The Ohio State University's Buckeye Centered Cubic team won the 17th installment of the **TMS Materials Bowl** at TMS2O24. Pictured are 2O23 TMS President Brad Boyce, who hosted the event, with the winning team members (from left to right): **Austin Gerlt, Evan Freeland, Justin Smith,** and **Regan Morton.** The University of Florida's Rudy-mentary Elements took second place in the competition, and the University of Tennessee Team, Vols of Steel, placed third. The Materials Bowl was followed by a student networking reception.



BLADESMITHING COMPETITION



The South Dakota School of Mines and Technology took home the Wadsworth-Sherby Bladesmithing Grand Prize at the 2024 TMS Bladesmithing Competition. A total of 24 entries, ranging from

pocketknives to daggers to swords, were displayed in the TMS2024 Exhibit Hall, and the winners were announced at a special awards ceremony at TMS2024. A complete listing of winners will be published in a future issue of *JOM*, providing a more comprehensive view of the competition.



DIVERSITY AND INCLUSION BREAKFAST

The TMS Diversity, Equity, and Inclusion (DEI) Committee hosted the **Fresh Coffee, Fresh Ideas**: **Diversity and Inclusion Breakfast** on Wednesday morning at TMS2024. Participants discussed topics related to diversity and inclusion such as moving beyond imposter syndrome and towards effective resolution of harassment, overcoming anxiety in the workplace, encouraging empathy over division, and building an inclusive culture. DEI will be the focus of the Fifth Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM5), to be co-located with the TMS 2025 Annual Meeting & Exhibition (TMS2025) in Las Vegas, Nevada, March 23–27. Visit www.tms.org/ TMS2025 to learn more and submit an abstract.



TMS DIVISION LUNCHEONS

Three technical division luncheons were held throughout the week at TMS2024, offering the opportunity for division members to come together to recognize their award recipients, share a meal, and hear from an invited speaker. Each of the five TMS technical divisions—Extraction & Processing Division (EPD), Functional Materials Division (FMD), Light Metals Division (LMD), Materials Processing & Manufacturing Division (MPMD), and Structural Materials Division (SMD)—were represented at these luncheons.

EPD/MPMD LUNCHEON



"As metallurgists, we are thrown into a setting where we are producing about two billion tonnes of metals every year," said **Dierk Raabe**, Max-Planck Institut für Eisenforschung GmbH, at the EPD/MPMD Luncheon at TMS2024. He addressed some

of the enormous sustainability challenges that come with being part of a such a large industry in his talk, "The Two Billion Tonnes Question: How Can Research Help to Make Metals Sustainable?"

His talk broadly touched on a number of sustainability issues and highlighted research opportunities to improve the overall sustainability of the metals industry. "We should not forget the magnitude of what we're talking about," he said at the conclusion of his talk. "We should not forget that we are one of the biggest businesses on the globe. For construction and manufacturing, we are the backbone."



At the LMD Luncheon, speaker **Glenn Pushis**, president of Aluminum Dynamics and senior vice president of strategic projects at Steel Dynamics, Inc., talked about how his company, traditionally a steel producer, is moving forward

with production of a new aluminum rolling mill in Columbia, Mississippi. Why is a steel company moving into aluminum? Thanks to a strong balance sheet, Steel Dynamics had money to invest in new growth, according to Pushis. After determining that it didn't make sense to grow further in steel, he said, the company looked around at what other metals could work for them, considering titanium and copper before settling on aluminum.

LMD LUNCHEON

"That's where we're now taking this project and growing a whole new strategic growth platform for Steel Dynamics in the aluminum space," he said.

SMD/FMD LUNCHEON

"Our next generation is in the room today," said **Suveen Mathaudhu**, TMS Structural Materials Division (SMD) Chair, as he introduced the speakers at the SMD/FMD luncheon at TMS2024. "They are the future of our profession."

Deviating from the usual format of a single invited speaker providing an in-depth talk, this year's SMD/ FMD luncheon instead featured a series of short talks given by the 2023 FMD and SMD Young Leaders Professional Development Award Recipients. Each presenter gave an overview of their research interests and areas of expertise and discussed the importance of receiving these awards. The presenters were (pictured, clockwise, from top left): **Jing Du** (2023 FMD recipient), Pennsylvania State University; **Dong "Lilly" Liu** (2023 SMD recipient), University of Bristol; **Christopher Zenk** (2023 SMD recipient), Friedrich-Alexander-Universität; and **Arun Kumar Mannodi** (2023 FMD recipient), Purdue University.



SCENES FROM NETWORKING RECEPTIONS



The TMS2024 Welcome Reception brought attendees together on the first night of the meeting.



TMS Fellows—recipients of the Society's highest honor—and their invited guests gathered to socialize at a special reception held on the opening night of the conference.







Attendees gathered for food, drink, and socializing with exhibitors and poster presenters at two events: the Exhibit Opening Reception and the Exhibit Hall Happy Hour, both of which included poster sessions.

The Asian & Pacific Islander Working Group and the Emerging Professionals Committee of TMS held a Networking Mixer for any attendees interested in networking, exploring early-career options, and learning more about the Asian and Pacific Islander experience.





Donors gathered for a special TMS Foundation Donor Dinner to socialize, to celebrate the TMS Foundation, and to hear from individuals who have been impacted by the work of this organization.



Undergraduate and graduate students were recognized at the TMS 2024 Annual Meeting & Exhibition (TMS2024), held March 3–7, in Orlando, Florida, for their excellent work in the 2024 Technical Division Student Poster Competition. Additionally, the Materials Characterization Committee and Magnesium Committee both recognized quality work for posters presented during the preceding year's annual meeting. Congratulations to all the award recipients, who are featured in the following pages.

TECHNICAL DIVISION STUDENT POSTER CONTEST WINNERS

EXTRACTION & PROCESSING DIVISION (EPD)

Graduate: "Unraveling the Structural Dynamics of Cu6Sn5 Hexagonal Phase under Electrical Current Stressing," **Shubhayan Mukherjee**, National Cheng Kung University



FUNCTIONAL MATERIALS DIVISION (FMD)

Graduate: "GenMG: A Tool for Predicting Novel Metallic Glasses with Application-specific Properties," Jerry Howard, University of Nevada, Reno



Undergraduate: "Functionalization and Performance Evaluation of Lignin-derived Carbon Fibers as Supercapacitor Electrodes." Jakob Scroggins, University of Tennessee, Knoxville



LIGHT METALS DIVISION (LMD)

Graduate: "Exploring High-temperature 7000 Series Aluminum Alloys: High-throughput DFT Calculations and Machine Learning Approaches," Yu-ning Chiu, National Cheng Kung University



Undergraduate: "Effects of LPBF Parameters on Fatigue Life of AlSi10Mg Alloys," **Timothy Nice**, New Mexico Institute of Mining and Technology



MATERIALS PROCESSING & MANUFACTURING DIVISION (MPMD)

Graduate: "Data-Driven Optimization of Wire Arc Directed Energy Deposition Manufacturing Conditions for Improved Bead Shape Prediction," **Stephen Price**, Worcester Polytechnic Institute

Undergraduate: "Synthesis of Spherical Uranium Dioxide Powder Feedstock for Fused Deposition Modelling (FDM)," **Valentyna Pawlowska**, Canadian Nuclear Laboratories/University of Waterloo



STUDENT CONTESTS AT TMS2025

Each year, the TMS Annual Meeting & Exhibition hosts a number of student contests, including the TMS Technical Division Student Poster Contest, the TMS Materials Bowl, and, in alternating years, the TMS Bladesmithing Competition. In the coming months, more information on how to participate in these competitions will be available through the TMS 2025 Annual Meeting & Exhibition website at www.tms.org/TMS2025.

STRUCTURAL MATERIALS DIVISION (SMD)

Graduate: "Temperature Effects on Dealloying Behavior of Binary Ni-20Cr Alloy in Molten FLiNaK," Harjot Singh, University of Virginia



Undergraduate: "Using Bound Powder Extrusion for Multi-materials," **Annika Bauman**, New Mexico Institute of Mining and Technology/Sandia National Laboratory



EPD MATERIALS CHARACTERIZATION BEST POSTER AWARD

This award recognizes the individual excellence of a poster within the Materials Characterization subject area presented in the preceding year in an EPD-sponsored session at the annual meeting. The 2023 award was presented at the Materials Characterization Committee meeting on Sunday, March 3, at TMS2024. *First Place:* "An Innovative Instrument Determines Chemistry at the Scale of 3D Printing," Jonathan Putman, Ellen Williams, and Peyton Willis, Exum Instruments

LMD MAGNESIUM TECHNOLOGY AWARD – BEST POSTER

This award recognizes the best contributions to the poster session of the TMS Magnesium Technology Symposium for research/development work by an individual or research group. The 2023 award was presented during the Corrosion and Coatings Session on Monday, March 4, at TMS2024.

First Place: "Flammability Resistant Magnesium Alloys Processed by Equal Channel Angular Pressing," Jitka Stráská, Peter Minárik, Robert Král, and Jozef Veselý, Charles University; and Jiri Kubasek, University of Chemistry and Technology Prague



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Hundreds of photos from TMS 2024 Annual Meeting & Exhibition events are now available to view on Flickr. Visit www.flickr.com/photos/tmsevents to browse photo albums and to search for photos of yourself and your colleagues.

Kaitlin Calva is an independent contractor providing writing support for TMS and JOM: The Magazine.

TMS MEETING HEADLINES



Meeting information is current as of March 26, 2024. For the most recent updates on TMS-sponsored events, visit www.tms.org/Meetings.

15th International Symposium on Superalloys (Superalloys 2024)



September 8–12, 2024 Champion, Pennsylvania, USA

Discount Registration Deadline: July 15, 2024

Superalloys 2024 will feature the keynote presentation, "Sustainability and Lifecycle Management of Nickel Superalloy Gas Turbine Components," by Steve Gregson, Senior Fellow, Engineering for Services, Rolls Royce.

www.tms.org/Superalloys2024

TMS Fall Meeting 2024 at Materials Science & Technology (MS&T24)



October 6–9, 2024 Pittsburgh, Pennsylvania, USA

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www.tms.org/TMSFall2024

TMS 2025 Annual Meeting & Exhibition (TMS2025)



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

Abstract Submission Deadline: July 1, 2024

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www.tms.org/TMS2025

OTHER MEETINGS OF NOTE



TMS Specialty Congress 2025

June 15–19, 2025 Anaheim, California, USA

www.tms.org/SpecialtyCongress2025



Extraction 2025 Meeting & Exhibition (Extraction 2025)

November 16–20, 2025 Phoenix, Arizona, USA

www.extractionmeeting.org/Extraction2025



TMS 2026 Annual Meeting & Exhibition (TMS2026)

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

www.tms.org/TMS2026

CO-SPONSORED MEETINGS

4th International Symposium on Electrometallurgy - part of the 63rd Conference of Metallurgists (COM 2024) August 19–22, 2024 Halifax, Nova Scotia, Canada Co-organized by TMS

Solidification and Casting of Aluminium Alloys: From Basics to Technology September 2–6, 2024 Brunel University, London, United Kingdom *Co-sponsored by TMS*

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