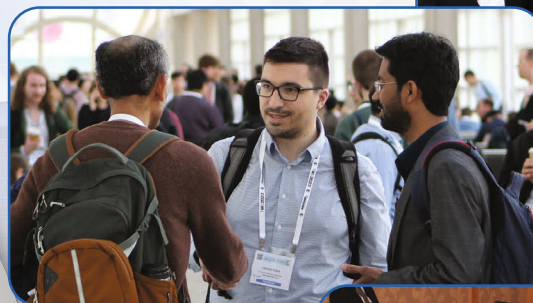


TMS2023 BACK TO BUSINESS AT TMS2023

Kelly Zappas





With nearly 4,500 attendees gathered in San Diego, California, the TMS 2023 Annual Meeting & Exhibition (TMS2023) was the fourth best-attended meeting in TMS history, marking a return to business as usual (more or less) after two decidedly *unusual* years for the Society's biggest event. By comparison, approximately 2,600 individuals came together in person for TMS2022 in Anaheim, California. (Because TMS2022 was a hybrid event, an additional 1,114 attendees participated virtually in the conference.) One year earlier, TMS2021—held as a fully virtual conference—attracted 2,967 attendees from around the world.

This year's event, held March 19–23 in one of TMS's most popular meeting locations, brought the conference back closer to its pre-COVID participation numbers. The last time TMS met in San Diego was in 2020 (shortly before widespread pandemic shutdowns began) when more than 4,600 individuals came together for the largest meeting in the Society's history.

This issue of *JOM* offers a look into the technical session rooms, the networking receptions, the student competitions, and the special events that brought the community together over the course of five days in March. Find more photos on Flickr at www.flickr.com/photos/tmsevents.

TMS2023 HOSTS SOLD-OUT EXHIBITION

With a total of 69 exhibiting companies, the TMS2023 Exhibit Hall was filled with booths and exhibitors demonstrating their products and services, from Monday, March 20, through Wednesday, March 22.

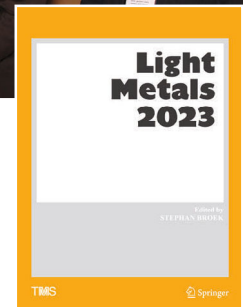
On Monday and Tuesday evenings, two separate networking events—an opening reception and a happy hour—gave attendees an opportunity to gather for food, drinks, and networking with exhibitors and each other. Each event featured a unique poster session highlighting different topics on each night. Poster presenters were on hand each night to discuss their work with attendees.

For information on participating as an exhibiting company in the TMS 2024 Annual Meeting & Exhibition (TMS2024) in Orlando, Florida, please contact Gavin McAuliffe, TMS2024 Exhibit Manager, Corcoran Expositions, at gavin@corcexpo.com.



TMS2023 PROCEEDINGS

Eleven TMS2023 conference proceedings were published and made available for free online access to registrants. These volumes are also now available for purchase through the TMS Bookstore. TMS members are eligible for 40% discounts on these and other TMS proceedings. Log in to www.tms.org/Bookstore to access member discount codes.



From left to right: 2022 TMS President Jud Ready presents a copy of *Light Metals 2023* to this year's editor, Stephan Broek, at the TMS Aluminum Committee meeting. Also pictured is Dmitry Eskin, chair of the TMS Aluminum Committee.

2022 TMS President Jud Ready (center, left) presents a copy of *Magnesium Technology 2023* to (from left to right) editors Steven Barela, Victoria M. Miller, and Petra Maier at the TMS Magnesium Committee Meeting. Not pictured are editors Aerial Leonard and Neale R. Neelameggham.

TMS2023 BY THE NUMBERS

Attendance

- 4,499:** Total attendees
- 1,393:** Student attendees
- 69:** Exhibiting companies
- 58:** Countries represented

Technical Program

- 3,316:** Oral presentations
- 677:** Poster presentations
- 105:** Symposia presented
- 486:** Sessions presented

Food and Beverage

- 831:** Gallons of coffee served during breaks
- 200:** Gallons of lemonade served
- 86:** Gallons of hot tea served

BRAD BOYCE TAKES OFFICE AS 2023 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.

Brad Boyce of Sandia National Laboratories took office as 2023 TMS president and offered these comments during his speech at the TMS-AIME Awards Ceremony at TMS2023: "I am really looking forward to the year ahead as the president of this great Society. To me, TMS is more than just a collection of scientists and engineers. It's a home; it's a family. Our passion for materials innovation is what pulls us together."

Boyce is a distinguished member of the technical staff at Sandia, where his research interests lie in micromechanisms of deformation and failure. Within TMS, he has chaired the TMS Mechanical Behavior of Materials Committee and the TMS Programming Committee, and he has served on the TMS Board of Directors, the TMS Foundation Board of Trustees, and numerous other committees, both technical and functional. He is also a past recipient of the TMS Brimacombe Medal and the TMS Structural Materials Division Young Leaders Professional Development Award.

As Boyce's term began, Jud Ready of the Georgia Institute of Technology concluded his term as 2022 TMS president. Ready also addressed the audience at the TMS-AIME Awards Ceremony held on Wednesday evening at TMS2023.



Society leadership transfers from 2022 TMS President Jud Ready (right) to 2023 TMS President Brad Boyce (left) during the TMS-AIME Awards Ceremony at TMS2023.

"The world comes to TMS' is a slogan of ours—because at our meetings and on-line, TMS connects members to technical communities of excellence," said Ready. "Approximately 4,500 individuals are connecting here, in this place, at TMS2023. That's only a couple hundred people less than our current largest meeting, TMS2020, also held here in San Diego."

The change in leadership also included Srinivas Chada moving into the role of vice president. Chada will serve as president in 2024.

MEET THE 2023 TMS BOARD OF DIRECTORS



Seven new members joined the TMS Board of Directors at TMS2023. The 2023 Board is pictured here. **Front row, left to right:** Alexis Lewis, Elsa Olivetti, Jonathan Madison, Saryu Fensin, Viola Acoff, Paul Mason, James Robinson. **Back row, left to right:** Suveen Mathaudhu, Edward Williams, Kester Clarke, Michael Titus, Jud Ready, Brad Boyce, Srinivas Chada, Timothy Rupert.

DAVID DANIELSON DELIVERS TMS2023 PLENARY TALK



Earlier in his career, David Danielson viewed the third “M” in the name of The Minerals, Metals & Materials Society (TMS) as the most prominent. But in recent years, as managing director of Breakthrough Energy Ventures, he finds that his focus has shifted. “As I really dug in on what’s going to drive impact for climate change,”

he said, he found that 90% of his projects were more related to mining and metals. “I’m finding that there is tremendous opportunity in a whole new generation of scientists, technologists, and entrepreneurs in mining, minerals, and metals.”

In his TMS2023 plenary presentation, “Gigaton Opportunities at the Intersection of Materials and Climate Technology,” Danielson discussed some of these projects and identified key problems that TMS members could help to solve that would have the greatest impact on climate change.

Danielson explained that we are currently on track to produce more than 80 gigatons of carbon dioxide emissions per year by 2050 (up from current levels of around 50 gigatons per year). But where we need to be is zero carbon dioxide emissions by 2050 to avoid the worst effects of climate change.

“If you view 2050 through an innovation lens,” he said, “the time to be launching companies to solve this challenge is today.” Working backwards, he pointed out that for a new technology to be operating to scale by 2050, it would take roughly 20 years to deploy. That means that by 2030, it would need to be commercially demonstrated and initially entered into the market. Because it takes approximately ten years to commercialize a new technology, if you want clean technology in place by 2050, you need to launch it today.



The two biggest problems he identified were steel and cement. “We need brilliant materials scientists to get after solutions in these two areas,” he said, emphasizing that the time to start implementing those solutions is now. “I’d encourage you only to use your talents on important projects,” said Danielson, who noted the importance of all three “M”s (minerals, metals, and materials) in projects going forward.

As we move away from fossil fuels, for example, we’ll face a much more materials-intensive economy, he said. There will be increasing demand for electric vehicle-related metals (such as copper, nickel, cobalt, and lithium) and any resulting mining boom will need to be more environmentally friendly than mining projects of the past.

“We’ll need about 1,000 more mines for these four metals,” he said. “And much more attention is being paid to sustainable mining, because we don’t want to trade one bad environmental impact for another.”

Danielson provided examples of projects addressing these problems, including Lilac Solutions, which is extracting lithium from dilute brines to deliver lithium cheaply; KoBold Metals, which is finding new metal resources using artificial intelligence; and Redwood Materials, which is recycling lithium-ion batteries into materials for the electric vehicle industry.

“These are the kind of innovations that are possible,” he said. “There’s a huge opportunity to get a whole new generation of minerals, metals, and materials students interested in these problems.”

Following the presentation, Danielson answered questions from the audience and accepted a certificate commemorating his role as plenary speaker from 2022 TMS President Jud Ready.

SEE YOU IN ORLANDO FOR TMS2024

Next year, TMS returns to another popular meeting location for the TMS 2024 Annual Meeting & Exhibition (TMS2024). The conference will take place in Orlando, Florida, at the Hyatt Regency Orlando resort. This venue will be the location for all TMS2024 technical programming as well as social and networking events.

To be a part of the TMS2024 technical program, submit your abstract today through the TMS2024 website at www.tms.org/TMS2024. There, you can view a full list of topic areas and symposia planned for the upcoming conference. Abstracts are due July 1, 2023.

