Software packages:

✓ **Thermo-Calc** for thermodynamics and phase equilibria in multicomponent systems
✓ **Diffusion module (DICTRA)** for modelling diffusion controlled transformations
✓ **Precipitation module (TC-PRISMA)** for modelling precipitation kinetics
✓ **Software development kits** for linking Thermo-Calc to your own software codes
✓ **Over 30 Databases** for thermodynamic and mobility applications

Benefits:

✓ **Predict** what phases form as a function of composition, temperature
✓ **Reduce** costly, time-consuming experiments
✓ **Base decisions** on scientifically supported predictions and data
✓ **Shorten** development time and accelerate materials development while reducing risk
✓ **Improve** the quality and consistency of your products through deeper understanding of your materials and processes

**Better Materials through Better Understanding**

Visit us at booth #401

[www.thermocalc.com](http://www.thermocalc.com)

info@thermocalc.com
WELCOME TO TMS2018!
Thank you for joining us at the TMS 2018 Annual Meeting & Exhibition (TMS2018). Whether it’s your first annual meeting or your 20th, we’re glad to have you here with us in Phoenix, Arizona, for the 147th installment of our distinguished event! This year, we have some enhancements planned that I think you’ll appreciate.

NEW FOR TMS2018: MONDAY PLENARY
We’re excited to introduce a new feature to this year’s annual meeting—a single-speaker, all-conference plenary session on Monday afternoon. Charlie Kuehmann, head of materials engineering for both Tesla and SpaceX, will speak on the future of materials and manufacturing innovation. To complement his presentation, Tesla and SpaceX have displays of their technology on the third floor of the convention center.

WELCOME TO OUR INTERNATIONAL PROGRAMMING PARTNERS
The 2nd International Conference on Computational Design and Simulation of Materials (CDSM 2018), organized jointly by TMS and the Chinese Society for Metals (CSM), is co-located with this year’s annual meeting. All TMS2018 registrants have access to the exciting technical program of CDSM 2018.

TMS also welcomes the Federation of European Materials Societies (FEMS) as a programming partner at TMS2018. FEMS has invited materials leaders from Europe for a keynote symposium: Energy and Transportation from a European Materials Perspective.

ENJOY LUNCH IN THE EXHIBIT HALL
As part of your registration, TMS will be providing lunches in the Exhibit Hall so that you can enjoy a meal between sessions while continuing to network with colleagues. Lunches will be available on Monday, Tuesday, and Wednesday.

FIND YOUR WAY WITH SCHEDULING TOOLS AND LOCATION MAPS
With nearly 4,000 presentations planned for TMS2018, determining what to attend and how to find your next location can be daunting. Here are some steps to make getting around easier: First, download the TMS2018 App for your mobile device. It includes maps and a scheduling tool that may prove a valuable and convenient way to structure your week. Second, make use of the TMS2018 Location Maps strategically placed throughout the convention center. They’re color-coded by topic area to help you find your next presentation.

ENJOY YOUR WEEK IN PHOENIX!
Phoenix is a TMS location new to many attendees, so be sure to take in some of the sights of our host city while you’re here. The VisitPhoenix Mobile Visitor Info Center on the 300 Level in the North Building can provide you with maps, visitors guides, and dining recommendations.

VISIT THE TMS MEMBER WELCOME CENTER
Please take a few minutes to meet some of the TMS staff at the TMS Member Welcome Center, which is located next to Registration on the north third floor of the convention center. If you are a first-time attendee or someone who has attended ten or more consecutive TMS annual meetings, stop by to pick up your free gift. I also encourage everyone to add to the mentorship artwork that the TMS Foundation is creating there.

If you have any questions for me, I’ll be available at the TMS Member Welcome Center from 5:00 p.m. to 6:00 p.m. on Monday evening and would be happy to discuss the present and future of TMS with any of you. I will also be at the President’s Welcoming Reception from 6:00 p.m. to 7:00 p.m. on Sunday. Check the VIP Meet & Greet schedule on page 15 of this program and at the TMS Member Welcome Center to see who else from TMS leadership you might want to connect with during the week.

Please use some of the valuable information you learn during this week to improve materials, products, and processes at your organization and to move the global minerals, metals, and materials community forward. Learn as much as you can, meet as many new people as possible, and enjoy your time at TMS2018 in Phoenix!

Sincerely,
David H. DeYoung
2017 TMS President
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# MAP OF DOWNTOWN PHOENIX

The map shows the locations of various hotels and conference centers in downtown Phoenix, including the Sheraton Grand Phoenix, Hyatt Regency Phoenix, Renaissance Phoenix Downtown Hotel, Phoenix Convention Center West, and Phoenix Convention Center North.

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# TECHNICAL PROGRAM

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OVERVIEW OF PROGRAMMING LEVELS

PCC West

Level 100 (PCC West)
Technical Programming, Professional Development Events, and Special Events

Level 300
301 Ballroom (PCC West)
All-Conference Plenary

Level 00

PCC North

Level 300
Networking Level 300 (PCC North)
Registration, Exhibit Hall, Member Welcome Center, Presenters’ Coffee, Posters, Free WiFi, Technology Display

Level 200
Programming Level 200 (PCC North)
Technical Programming

Level 100
Programming Level 100 (PCC North)
Technical Programming

Phoenix Convention Center (PCC)
The chances of an emergency situation occurring at TMS2018 are quite small. However, being prepared to react effectively in case of an incident is the most critical step in ensuring the health and safety of yourself and those around you.

KNOW YOUR SURROUNDINGS
Please take a few moments to review the maps of the TMS2018 facilities, on pages 2-8 of this program and also available on the TMS2018 App. When you enter these buildings, familiarize yourself with the exits and the stairs leading to those exits. When you arrive at your session or event location, look for the emergency exits that are in proximity to you.

53 Automatic External Defibrillators (AED) are distributed around the Phoenix Convention Center (PCC) campus. AED cabinets are alarmed and opening a cabinet will generate a response from Security. Take the time to locate the nearest AED to your location.

First Aid rooms are available on every exhibition level of the PCC.

HOW TO REPORT AN EMERGENCY
Emergencies may be reported in one of three ways at the PCC:

1. By calling House Security at 1-602-262-7271 or by dialing 85 from any house phone. House Security will call 9-1-1 for Phoenix Fire Department and/or Phoenix Police Department and coordinate their arrival.

2. By calling 9-1-1 directly. If 9-1-1 is called directly, please inform the nearest security guard so that they can work with first responders to expedite their arrival.

3. Contacting any PCC security guard or staff member.

EMERGENCY EVACUATION
Should the fire alarm sound, all attendees should immediately evacuate the building using the nearest exit. Move away from the building, at least across the street and await instructions.

Persons with disabilities should gather at ADA Assistance locations marked with blue signs if they require evacuation assistance.

LOCKDOWN
The convention center is prepared to lockdown the campus in response to a threat outside the building. A lockdown is initiated with a building-wide announcement asking occupants to remain inside and providing information about the threat outside. Security and PCC staff members will staff and lock all exterior doors to prevent entry. Follow-up announcements will be made to keep everyone informed. Please note that staff and security will not physically prevent anyone from leaving the building during a lockdown.

HOSPITALS, URGENT CARE CENTERS, AND PHARMACIES
A listing of hospitals, urgent care centers, and pharmacies can be found in the Attendee Toolbox section of the TMS2018 website and on the TMS2018 App.

PHOENIX DOES NOT OBSERVE DAYLIGHT SAVINGS TIME.

Phoenix uses Mountain Standard Time (MST) throughout the year, and will not be changing to US Daylight Savings Time on March 11.
REGISTRATION & TICKETS

REGISTRATION BADGES

The TMS 2018 Annual Meeting & Exhibition (TMS2018) name badge you received at registration must be worn for admission to technical sessions, the exhibition hall, social functions, and other events. Your full-meeting registration badge provides you access to:

- More than 85 symposia in 15 technical tracks
- Technical sessions of the 2nd International Conference on Computational Design and Simulation of Materials (CDSM 2018)
- A three-day pass to the TMS2018 Exhibition:
  - Exhibit Hall Opening Reception and Poster Session
  - Exhibit Hall Happy Hour and Poster Session
  - Complimentary Lunches
- President’s Welcoming Reception
- All-conference plenary session, featuring Charlie Kuehmann of Tesla and SpaceX
- 2018 TMS-AIME Awards Ceremony
- Online access to the complete collection of TMS2018 proceedings publications
- Networking Level on the third floor of the convention center, which offers free WiFi and informal networking opportunities

Attached to your name badge you will find tickets that will allow you access to select functions at TMS2018.

Please keep your badge with you at all times during the meeting. Replacement badges can be printed at the TMS2018 registration desk for a fee of $25.

TICKETED EVENTS

Certain receptions, luncheons, and other activities at TMS2018 require purchase of a ticket in order to attend. If you purchased tickets in advance for one of these events, your ticket will be attached to your name badge. If you would like to add a ticketed event to your registration, please inquire at the registration area.

Most ticket sales will be closed by 10:00 a.m. the day before the event. For example, tickets for the awards banquet on Wednesday evening should be purchased by 10:00 a.m. on Tuesday. An exception is the Fresh Coffee, Fresh Ideas: Diversity and Inclusion Breakfast on Wednesday morning. Ticket sales for this event will close at 5:00 p.m. on Monday.

NOTICE REGARDING TECHNICAL PROGRAM CANCELLATIONS

Changing the times of presentations is disruptive to the program and may cause delegates to miss valuable presentations. We have asked symposium organizers and session chairs not to adjust presentation times in the event that a speaker is unable to deliver his or her talk due to international travel and/or visa issues resulting in late cancellation or “no show.”

COMMEMORATIVE PINS

Each TMS2018 attendee received a commemorative pin in their registration bag, the first in a series to be issued through 2021 to celebrate the 150th anniversary of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME). This year’s pin recognizes the 30th anniversary of the TMS technical divisions and provides some background on their founding.
FREE PROCEEDINGS ACCESS
TMS2018 attendees in selected registration classes receive free online access to the complete collection of proceedings publications. For details on how to download the proceedings publications, see the instructions attached to your name badge.

Please note that complimentary proceedings content must be downloaded by April 30, 2018, at which time standard pricing will take effect.

INDIVIDUAL VOLUMES FOR PURCHASE
TMS members receive a 40% discount off hard copies of the TMS2018 proceedings volumes presented on this page. These books will be available for purchase at the Springer booth, located near the TMS2018 registration area at the Phoenix Convention Center.

Visit the online TMS Bookstore to search the complete inventory of available TMS publications, including past proceedings volumes at www.tms.org/Bookstore.
FOOD, WIFI & BUSINESS SERVICES

WiFi Access
Free wireless internet access will be available throughout the Networking Level on the 300 floor of the Phoenix Convention Center North Building, which includes the registration, presenters’ coffee, and TMS Member Welcome Center areas. Complimentary WiFi is also available in the public areas on the 100 level of the convention center (in the food court and atrium/lobby areas). Select the TMS2018 WiFi network; no password is needed.

Free wireless internet access will also be available in the lobby of the Sheraton Grand Phoenix hotel. If you booked in the TMS2018 room block, you will also have access to complimentary WiFi in your hotel guest room at the Sheraton.

Coffee Shops
There is a Starbucks located in the West Building and free-trade City Central Coffee in the North Building. Starbucks is open on the weekend from 7:00 a.m. to 2:00 p.m. and weekdays from 6:30 a.m. to 5:00 p.m. City Central Coffee is open weekdays from 7:00 a.m. to 2:30 p.m. Also, there are more than 15 unique coffee shops within a few blocks of the convention center.

Lunches
Tickets for lunches in the TMS2018 Exhibit Hall (included as part of your registration) are attached to each full-conference attendee’s name badge. Please take advantage of these complimentary lunches as a convenient option during busy days. Lunch will be available in the exhibit hall at the following days and times:

- **Monday, March 12**: 1:00 p.m. to 2:30 p.m.
- **Tuesday, March 13**: 11:30 a.m. to 1:30 p.m.
- **Wednesday, March 14**: 11:30 a.m. to 1:30 p.m.

On Thursday, when lunch is not available in the exhibit hall, attendees can visit the Metro Marché in the North Building from 11:00 a.m. to 2:00 p.m. The Metro Marché is the Phoenix Convention Center’s food court, offering salads, sandwiches, pizzas, and Mexican-style tortillas. Attendees can access free WiFi in this area.

For more information on convention center and local area dining and maps visit www.phoenixconventioncenter.com/dining.

Business Center
There is a UPS Store located at the Phoenix Convention Center. They are closed on Sundays but open Monday through Friday from 7:00 a.m. to 6:00 p.m.

For more information on available services, please visit https://phoenix-az-5750.theupsstorelocal.com/, call 1-602-251-0135, or e-mail store5750@theupsstore.com.

Look for our color-coded maps located throughout the convention center to help you find your way! Similar programming topics are grouped by zones and assigned colors to help you quickly determine where you can find the programming topics you seek.

All times printed in this program refer to Mountain Standard Time. (Phoenix does not observe Daylight Savings Time.) See page 9 graphic for detailed information related to Mountain Standard Time.
TMS2018 MOBILE APP
A convenient alternative to this printed at-meeting program, the TMS2018 mobile application can serve as your hand-held guide to the meeting. To download the app, search “TMS Annual Meeting” in the App Store or the Google Play™ Store.

The App’s features include:
- Latest programming schedule
- Complete abstracts
- Ability to build a personalized schedule
- Speaker information
- Exhibit map
- Exhibitors and sponsors
- Venue information
- Access to TMS2018 News
- NEW! See if speakers and attendees have checked in onsite

PLEASE NOTE: LOG IN REQUIRED
The first time you open the TMS2018 App, you will be asked to log in using your TMS2018 registration confirmation number. This number will be in your e-mailed registration confirmation and is conveniently printed on the front of your badge. Please remember to use the hyphen when entering your unique confirmation code (18-xxxxx).

TMS2018 NEWS: YOUR DAILY MEETING NEWSLETTER
Want to stay informed of everything that’s happening at the TMS 2018 Annual Meeting & Exhibition?

TMS2018 News, a daily newsletter reporting conference activities and events, will be published each morning, Sunday through Thursday, during the conference. You can access the newsletter through the TMS2018 app at any time, through the TMS2018 website, or by clicking on the link in the notification e-mail we’ll send each morning.

Each issue will provide a reminder of the big events planned for the day, as well as recaps and photos from events happening around the meeting. So before you start your day at TMS2018, sit down with a cup of coffee and skim TMS2018 News so that you don’t miss a thing.

TWEET YOUR OWN UPDATES
Keep each other updated on meeting activities, interesting talks, and tips on the best local restaurants. Use #TMSAnnualMeeting to tweet your observations to @TMSSociety.
MEMBER SERVICES & INFORMATION

VISIT THE TMS MEMBER WELCOME CENTER
Location: Phoenix Convention Center, 300 Level - North

If you are a full-conference attendee of TMS2018, you are either already a member of TMS, or will be receiving membership after the meeting as part of your non-member registration. Find out how being a part of this extraordinary community of minerals, metals, and materials scientists and engineers can help you to advance your career at the TMS Member Welcome Center, located on the third floor of the Phoenix Convention Center near registration.

HOURS OF OPERATION
Sunday: 7:00 a.m. to 7:00 p.m.
Monday: 6:30 a.m. to 6:00 p.m.
Tuesday: 7:00 a.m. to 6:00 p.m.
Wednesday: 7:00 a.m. to 5:00 p.m.
Thursday: 7:00 a.m. to 5:00 p.m.

FIRST-TIME ATTENDEES
If this is your first time attending a TMS annual meeting, visit the TMS Member Welcome Center to pick up your First-Time Attendee Welcome Packet. This resource offers practical tips on making the most of the meeting, a guide to your new TMS membership, tools to help you get more involved in the society, and a small gift to thank you for joining us at TMS2018.

REPEAT ATTENDEES
If you have attended ten or more consecutive TMS annual meetings, stop by the TMS Member Welcome Center for your free gift—our small way of saying thank you for your loyalty to us and our conference. Eligible attendees received an e-mail in advance of the meeting and can use the ticket attached to their name badge to claim their gift.

ROOMS FOR NURSING MOTHERS
A private, designated room is available at the convention center for nursing mothers. To access the private room, contact TMS staff at the Member Welcome Center, located on the third floor of the convention center.

CELEBRATE YOUR MENTORS
To kick off its 25th anniversary year, the TMS Foundation invites you to stop by the TMS Member Welcome Center to help us honor the roles that mentors play in the development of young scientists and engineers. Take a few moments to recognize those who have helped shaped your career by adding their name(s) to the TMS “family tree” that represents how these important individuals have helped to grow our professional community.

WANT TO SEE MORE OF PHOENIX?
Stop by the VisitPhoenix Mobile Visitor Information Center, located on the 300 Level in the North Building for:

- Downtown Phoenix Maps
- Tour & Dining Reservations Assistance
- Visitor Guides & Local Business Brochures

Photo Credit: www.visitphoenix.com
Visit the TMS Member Welcome Center throughout the week to meet with TMS leadership and to discuss different aspects of TMS involvement.

**SUNDAY, MARCH 11**

**Bringing MSE to High Schools**
**Date:** Sunday, March 11  
**Time:** 10:00 a.m. to Noon  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guests:** Rebecca Connelly, Curriculum Advisor, Materials Explorers™; André Phillion, Chair, Materials Explorers™ Committee; Lily Nguyen, Materials Explorers™ Committee; and Iver Anderson, Advisor to the Materials Explorers™ Committee

Explore TMS's new high school STEM outreach program, Materials Explorers™, and learn how you can make a difference in your local community.

**Meet the Incoming TMS Vice President**
**Date:** Sunday, March 11  
**Time:** 2:00 p.m. to 3:00 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** James C. Foley, Incoming TMS Vice President

**MONDAY, MARCH 12**

**Explore the TMS Foundation**
**Date:** Monday, March 12  
**Time:** 9:00 a.m. to 10:00 a.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** Garry W. Warren, Chair, TMS Foundation

Learn about the important work of the TMS Foundation, now celebrating its 25th year, and what you can do to help further its mission.

**Bringing MSE to High Schools**
**Date:** Monday, March 12  
**Time:** 10:00 a.m. to 11:00 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guests:** Rebecca Connelly, Curriculum Advisor, Materials Explorers™; André Phillion, Chair, Materials Explorers™ Committee; and Eric Brown, Vice Chairperson, Public and Governmental Affairs Committee

**Discuss ABET with the TMS Accreditation Committee**
**Date:** Monday, March 12  
**Time:** 1:30 p.m. to 2:30 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** Gregg Janowski, Vice Chairperson, TMS Accreditation Committee

Find out more about becoming an ABET Program Evaluator & discuss the ABET Criteria 3 & 5 revisions.

**Bringing MSE to High Schools**
**Date:** Monday, March 12  
**Time:** 2:30 p.m. to 3:30 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guests:** Rebecca Connelly, Curriculum Advisor, Materials Explorers™; André Phillion, Chair, Materials Explorers™ Committee; and Eric Brown, Vice Chairperson, Public and Governmental Affairs Committee

**How Can Early Career Professionals Benefit from TMS?**
**Date:** Monday, March 12  
**Time:** 4:00 p.m. to 5:00 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** Edward D. Herderick, Trustee, TMS Foundation

Why engage with TMS as an early career professional? Learn how to leverage volunteerism in building a career.

**Meet the 2017 TMS President**
**Date:** Monday, March 12  
**Time:** 5:00 p.m. to 6:00 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** David DeYoung, 2017 TMS President

**TUESDAY, MARCH 13**

**Meet the 2018 TMS President**
**Date:** Tuesday, March 13  
**Time:** 11:00 a.m. to Noon  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** Kevin Hemker, 2018 TMS President

**Discover Bladesmithing with TMS**
**Date:** Tuesday, March 13  
**Time:** 1:00 p.m. to 2:00 p.m.  
**Location:** TMS Member Welcome Center, Phoenix Convention Center  
**Guest:** Michael West, Member, Bladesmithing Committee
Volunteering with TMS
Date: Tuesday, March 13
Time: 2:00 p.m. to 3:00 p.m.
Location: TMS Member Welcome Center, Phoenix Convention Center
Guest: Thomas Battle, Extractive Metallurgy Consultant, Senior Advisor, Extraction & Processing Division

Discover how TMS is led by its members and explore the many opportunities for volunteering with the Society.

TMS’s Engagement with Public and Governmental Affairs
Date: Tuesday, March 13
Time: 3:00 p.m. to 4:00 p.m.
Location: TMS Member Welcome Center, Phoenix Convention Center
Guest: John Howarter, TMS Director/Chair, Public & Governmental Affairs

Find out more about the role and recent activities of the TMS Public and Governmental Affairs Committee.

TMS’s Technical Divisions Structure
Date: Wednesday, March 14
Time: 10:00 a.m. to 11:00 a.m.
Location: TMS Member Welcome Center, Phoenix Convention Center
Guest: Cynthia Belt, TMS Director/Chair, Extraction & Processing Division

Discuss Diversity and Inclusion in MSE
Date: Wednesday, March 14
Time: 11:00 a.m. to Noon
Location: TMS Member Welcome Center, Phoenix Convention Center
Guest: Megan Cordill, Vice Chair, Diversity Committee

Explore diversity and inclusion issues facing materials science and engineering and learn more about TMS initiatives to advance diversity.
MEETING BADGES
All attendees must wear registration badges at all times during the meeting to ensure admission to events included in the paid fee such as technical sessions, exhibition, and receptions. “Exhibit Only” badges only provide admittance to the show floor for events in the exhibit hall. “Exhibit Only” attendees may not attend technical sessions.

BADGE REPLACEMENT FEE
There is a $25 fee to reprint lost badges. Visit the registration area to request a replacement badge.

GUEST SESSION ACCESS
Each full-conference attendee is permitted up to two guests for one session at which they are presenting. This does not include colleagues or exhibitors. This access is intended for family members who wish to listen to one talk presented by their relative. No one under 18 permitted. Please provide the names of the guests who will be attending your presentations when picking up your badge.

GUEST FUNCTION TICKETS
You may purchase additional tickets to social functions for your guests at the registration desk.

REFUND POLICY
The deadline for all refunds was February 1, 2018. No refunds will be issued at the meeting. Fees and tickets are nonrefundable. TMS is not responsible for “no-show” presenters. Presenters are scheduled and advertised in good faith based on the presenter’s proposal to be included in the program.

PHOTOGRAPHY AND AUDIO/VIDEO RECORDING POLICY
TMS reserves the right to all audio and video reproductions of presentations at TMS-sponsored meetings. By registering for this meeting, all attendees acknowledge that they may be photographed by TMS personnel while at events, and that those photos may be used for promotional purposes, in TMS publications and websites, and on social media sites.

Any recording of sessions (audio, video, still photography, etc.) intended for personal use, distribution, publication, or copyright without the express written consent of TMS and the individual authors is strictly prohibited. No photos are to be taken of any presenter’s slides. Attendees violating this policy may be asked to leave the session or the meeting without refund.

TMS DIVERSITY AND INCLUSION STATEMENT
The Minerals, Metals & Materials Society (TMS) is committed to advancing diversity in the minerals, metals, and materials professions, and to promoting an inclusive professional culture that welcomes and engages all who seek to contribute to the field. TMS recognizes that a diverse minerals, metals, and materials workforce is critical to ensuring that all viewpoints, perspectives, and talents are brought to bear in addressing complex science and engineering challenges. To build and nurture this diverse professional community, TMS welcomes and actively engages the participation of underrepresented groups in all of its initiatives and endeavors.

ANTI-HARASSMENT POLICY
TMS policy prohibits conduct that is disrespectful, unprofessional, or harassing as related to any number of factors including, but not limited to, religion, ethnicity, gender, national origin or ancestry, physical or mental disability, physical appearance, medical condition, partner status, age, sexual orientation, military and veteran status, or any other characteristic protected by relevant federal, state, or local law or ordinance or regulation. Failure to comply with this policy could lead to censure from the TMS Board of Directors, potential legal action, or other actions. Anyone who witnesses prohibited verbal or physical conduct should notify a TMS staff member as soon as possible following the incident. It is the duty of the individual reporting the prohibited conduct to make a timely and accurate complaint so that the issue can be resolved swiftly.

ANTITRUST COMPLIANCE POLICY
TMS complies with the antitrust laws of the United States. Attendees are encouraged to consult with their own corporate counsel for further guidance in complying with U.S. and foreign antitrust laws and regulations.

AMERICANS WITH DISABILITIES ACT
TMS strongly supports the federal Americans with Disabilities Act (ADA) which prohibits discrimination against, and promotes public accessibility for, those with disabilities. In support of, and in compliance with ADA, we ask those requiring specific equipment or services to contact TMS Meeting Services in advance at 1-724-776-9000 or on-site at the TMS Member Welcome Center.

CELL PHONE USE
In consideration of attendees and presenters, TMS kindly requests that you minimize disturbances by setting all cell phones and other devices on “silent” while in meeting rooms.
The new Nanoindentation Tester – a new era of precision

- Improved resolution and noise floor for the most precise results at low forces (below 1 mN)
- “Quick Matrix” indentation mode – highly precise results in just a few minutes
- Extensive load range from nano- to microindentation (from 0.1 mN to 500 mN)
- Reference ring for complete protection of the tip and highly accurate results

Get in touch: www.anton-paar.com
### Saturday, March 10

#### Committee & Business Meetings

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<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Registration Item Writers Workshop and Committee Meeting</td>
<td>10-Mar</td>
<td>9:00 AM to 5:00 PM</td>
<td>Sheraton</td>
<td>Ahwatukee A</td>
<td>R</td>
</tr>
<tr>
<td>Financial Planning Committee</td>
<td>10-Mar</td>
<td>2:00 PM to 5:00 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>R</td>
</tr>
<tr>
<td>Professional Registration Committee Dinner</td>
<td>10-Mar</td>
<td>6:00 PM to 8:00 PM</td>
<td>Offsite</td>
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</tbody>
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### Sunday, March 11

#### All-Conference Events

<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>11-Mar</td>
<td>7:00 AM to 7:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>TMS Member Welcome Center</td>
<td>11-Mar</td>
<td>7:00 AM to 7:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>Programming Support Desk</td>
<td>11-Mar</td>
<td>2:00 PM to 6:00 PM</td>
<td>PCC</td>
<td>Outside Hall E</td>
<td>O</td>
</tr>
<tr>
<td>President’s Welcoming Reception</td>
<td>11-Mar</td>
<td>6:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>Hall E</td>
<td>O</td>
</tr>
</tbody>
</table>

#### Exhibition

<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibit Move In</td>
<td>11-Mar</td>
<td>8:00 AM to 5:00 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>R</td>
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</tbody>
</table>

#### Professional Development & Special Lectures

<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Alloy Thermodynamics: the CALPHAD Approach and Beyond Course</td>
<td>11-Mar</td>
<td>8:30 AM to 12:00 PM</td>
<td>PCC</td>
<td>101B</td>
<td>T</td>
</tr>
<tr>
<td>Hands On Interactive Materials Data Visualization and Selection Tools for Research and Teaching Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 12:00 PM</td>
<td>PCC</td>
<td>103A</td>
<td>T</td>
</tr>
<tr>
<td>Design of Novel Magnetic Materials by Modelling and Advanced Synthesis and Characterization Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>101A</td>
<td>T</td>
</tr>
<tr>
<td>Modeling the Coevolution of Microstructure and Properties using the MOOSE Framework Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>101C</td>
<td>T</td>
</tr>
<tr>
<td>Best Practices in Bauxite and Alumina Processing and Production Course</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>105A</td>
<td>T</td>
</tr>
<tr>
<td>Metal Treatment for Aluminum Ingot Casting Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>105C</td>
<td>T</td>
</tr>
<tr>
<td>14th Annual Advanced Microelectronic Packaging, Emerging Interconnection Technology, and Pb-free Solder Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>106A</td>
<td>T</td>
</tr>
<tr>
<td>Improving Culture &amp; Business Performance: Going Beyond the Warm and Fuzzy Workshop</td>
<td>11-Mar</td>
<td>8:30 AM to 4:30 PM</td>
<td>PCC</td>
<td>106C</td>
<td>T</td>
</tr>
<tr>
<td>An Introduction to Computational Modelling in Materials Processing Course</td>
<td>11-Mar</td>
<td>1:00 PM to 4:30 PM</td>
<td>PCC</td>
<td>101B</td>
<td>T</td>
</tr>
<tr>
<td>Avizo 3D Analysis Software for Materials Science Workshop</td>
<td>11-Mar</td>
<td>1:00 PM to 4:30 PM</td>
<td>PCC</td>
<td>103A</td>
<td>T</td>
</tr>
<tr>
<td>Young Professionals Workshop on Preparing a Winning Application Package to Find Your Future Job</td>
<td>11-Mar</td>
<td>1:00 PM to 4:30 PM</td>
<td>PCC</td>
<td>104A</td>
<td>T</td>
</tr>
<tr>
<td>Additive Manufacturing Materials and Processes Workshop</td>
<td>11-Mar</td>
<td>1:00 PM to 5:30 PM</td>
<td>PCC</td>
<td>106B</td>
<td>T</td>
</tr>
<tr>
<td>TMS101: Fundamentals of TMS</td>
<td>11-Mar</td>
<td>3:00 PM to 4:00 PM</td>
<td>PCC</td>
<td>121B</td>
<td>O</td>
</tr>
</tbody>
</table>

#### Student & Young Professional Functions

<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Bowl</td>
<td>11-Mar</td>
<td>12:00 PM to 5:45 PM</td>
<td>PCC</td>
<td>221ABC</td>
<td>O</td>
</tr>
<tr>
<td>Elimination Rounds</td>
<td>11-Mar</td>
<td>12:00 PM to 3:00 PM</td>
<td>PCC</td>
<td>221ABC</td>
<td>O</td>
</tr>
<tr>
<td>Championship Round</td>
<td>11-Mar</td>
<td>5:00 PM to 5:45 PM</td>
<td>PCC</td>
<td>221ABC</td>
<td>O</td>
</tr>
<tr>
<td>Student Networking Mixer</td>
<td>11-Mar</td>
<td>7:00 PM to 8:30 PM</td>
<td>PCC</td>
<td>Hall AB Foyer</td>
<td>O</td>
</tr>
</tbody>
</table>

**Access Notes:**
- **O** - Open to all attendees
- **R** - Restrictions Apply
- **I** - Invitation Only
- **T** - Ticketed Event, Pre-registration required

**Facility Notes:**
- **PCC** = Phoenix Convention Center
- **Sheraton** = Sheraton Grand Phoenix
## CALENDAR OF EVENTS

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<thead>
<tr>
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<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Functions</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TMS Fellows and Invited Guests Reception</td>
<td>11-Mar</td>
<td>4:30 PM to 6:30 PM</td>
<td>Sheraton</td>
<td>The District Wine Room</td>
<td>I</td>
</tr>
<tr>
<td><strong>Committee &amp; Business Meetings</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Board Member Orientation</td>
<td>11-Mar</td>
<td>8:00 AM to 9:30 AM</td>
<td>Sheraton Boardroom</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>TMS Board of Directors Meeting</td>
<td>11-Mar</td>
<td>10:00 AM to 1:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
<tr>
<td>Accreditation Committee Meeting</td>
<td>11-Mar</td>
<td>12:30 PM to 2:30 PM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>O</td>
</tr>
<tr>
<td>Magnesium Committee Meeting</td>
<td>11-Mar</td>
<td>1:30 PM to 3:00 PM</td>
<td>PCC</td>
<td>103B</td>
<td>O</td>
</tr>
<tr>
<td>Nominating Committee Meeting</td>
<td>11-Mar</td>
<td>1:30 PM to 3:00 PM</td>
<td>Sheraton Boardroom</td>
<td>Arcadia Boardroom</td>
<td>R</td>
</tr>
<tr>
<td>Recycling and Environmental Technologies Committee Meeting</td>
<td>11-Mar</td>
<td>1:30 PM to 3:00 PM</td>
<td>Sheraton</td>
<td>Estrella</td>
<td>O</td>
</tr>
<tr>
<td>Metallurgical and Materials Transactions Board of Review</td>
<td>11-Mar</td>
<td>2:00 PM to 3:00 PM</td>
<td>Sheraton</td>
<td>Cameback B</td>
<td>I</td>
</tr>
<tr>
<td>Aluminum Committee Meeting</td>
<td>11-Mar</td>
<td>2:00 PM to 4:00 PM</td>
<td>Sheraton</td>
<td>Maryvale B</td>
<td>O</td>
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<tr>
<td>Materials Characterization Committee Meeting</td>
<td>11-Mar</td>
<td>2:30 PM to 4:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>O</td>
</tr>
<tr>
<td>Pyrometallurgy Committee Meeting</td>
<td>11-Mar</td>
<td>3:00 PM to 4:30 PM</td>
<td>Sheraton</td>
<td>Cameback A</td>
<td>O</td>
</tr>
<tr>
<td>ABET Refresher Training</td>
<td>11-Mar</td>
<td>3:00 PM to 5:00 PM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>O</td>
</tr>
<tr>
<td>Public &amp; Governmental Affairs Committee Meeting</td>
<td>11-Mar</td>
<td>3:30 PM to 5:30 PM</td>
<td>Sheraton</td>
<td>Estrella</td>
<td>O</td>
</tr>
<tr>
<td>Hydrometallurgy and Electrometallurgy Committee Meeting</td>
<td>11-Mar</td>
<td>4:00 PM to 5:00 PM</td>
<td>Sheraton</td>
<td>Cameback B</td>
<td>O</td>
</tr>
<tr>
<td>TMS Program Committee Meeting</td>
<td>11-Mar</td>
<td>4:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
<tr>
<td>JOM Advisor Briefing</td>
<td>11-Mar</td>
<td>4:30 PM to 5:30 PM</td>
<td>PCC</td>
<td>121C</td>
<td>I</td>
</tr>
<tr>
<td>Diversity Committee Meeting</td>
<td>11-Mar</td>
<td>4:30 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Maryvale B</td>
<td>O</td>
</tr>
<tr>
<td>Process Technology and Modeling Committee Meeting</td>
<td>11-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Laveen A</td>
<td>O</td>
</tr>
<tr>
<td>Thin Films and Interfaces Committee Meeting</td>
<td>11-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Cameback A</td>
<td>O</td>
</tr>
<tr>
<td>Integrating Materials and Manufacturing Innovation Editorial Board</td>
<td>11-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Cameback B</td>
<td>I</td>
</tr>
<tr>
<td>Additive Manufacturing Committee Meeting</td>
<td>11-Mar</td>
<td>5:30 PM to 7:00 PM</td>
<td>PCC</td>
<td>230</td>
<td>O</td>
</tr>
<tr>
<td>Nanomechanical Materials Behavior Committee Meeting</td>
<td>11-Mar</td>
<td>6:00 PM to 7:30 PM</td>
<td>PCC</td>
<td>103B</td>
<td>O</td>
</tr>
<tr>
<td>Mechanical Behavior of Materials Committee Meeting</td>
<td>11-Mar</td>
<td>7:30 PM to 9:00 PM</td>
<td>PCC</td>
<td>103B</td>
<td>O</td>
</tr>
<tr>
<td>Phase Transformations Committee Meeting</td>
<td>11-Mar</td>
<td>7:30 PM to 9:00 PM</td>
<td>Sheraton</td>
<td>Estrella</td>
<td>O</td>
</tr>
<tr>
<td><strong>Monday, March 12</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>All-Conference Events</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Programming Support Desk</td>
<td>12-Mar</td>
<td>6:30 AM to 6:00 PM</td>
<td>PCC</td>
<td>Outside Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Registration</td>
<td>12-Mar</td>
<td>6:30 AM to 6:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>TMS Member Welcome Center</td>
<td>12-Mar</td>
<td>6:30 AM to 6:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>Presenters’ Coffee</td>
<td>12-Mar</td>
<td>6:45 AM to 7:45 AM</td>
<td>PCC</td>
<td>Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Technical Programming Sessions</td>
<td>12-Mar</td>
<td>8:00 AM to 6:00 PM</td>
<td>PCC</td>
<td>See Technical Program section for complete schedule and locations</td>
<td>O</td>
</tr>
<tr>
<td>Morning Break</td>
<td>12-Mar</td>
<td>9:20 AM to 10:00 AM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
<tr>
<td>All-Conference Plenary Session</td>
<td>12-Mar</td>
<td>12:00 PM to 1:00 PM</td>
<td>PCC</td>
<td>West Ballroom 301 A-D</td>
<td>O</td>
</tr>
<tr>
<td>Afternoon Break</td>
<td>12-Mar</td>
<td>3:50 PM to 4:30 PM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
</tbody>
</table>

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<th>Room</th>
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</tr>
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<tbody>
<tr>
<td><strong>Exhibition</strong></td>
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</tr>
<tr>
<td>Exhibit Move In</td>
<td>12-Mar</td>
<td>8:00 AM to 10:00 AM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>R</td>
</tr>
<tr>
<td>TMS2018 Exhibition</td>
<td>12-Mar</td>
<td>11:00 AM to 7:30 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td>Poster Session I Poster Set-up</td>
<td>12-Mar</td>
<td>12:00 PM to 2:00 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td>Lunch in the Exhibit Hall</td>
<td>12-Mar</td>
<td>1:00 PM to 2:30 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>T</td>
</tr>
<tr>
<td>Poster Session I Gallery Viewing</td>
<td>12-Mar</td>
<td>2:00 PM to 6:00 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td>Exhibit Opening Reception &amp; Poster Session I Presentations</td>
<td>12-Mar</td>
<td>6:00 PM to 7:30 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td>Poster Session I Dismantle</td>
<td>12-Mar</td>
<td>7:30 PM to 7:45 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td><strong>Student &amp; Young Professional Functions</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Meet-a-Mentor</td>
<td>12-Mar</td>
<td>5:00 PM to 6:30 PM</td>
<td>PCC</td>
<td>105C</td>
<td>R</td>
</tr>
<tr>
<td>Technical Division Student Poster Contest</td>
<td>12-Mar</td>
<td>6:00 PM to 7:30 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td><strong>Social Functions</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SMD Luncheon</td>
<td>12-Mar</td>
<td>1:00 PM to 2:30 PM</td>
<td>PCC</td>
<td>106ABC</td>
<td>T</td>
</tr>
<tr>
<td>University of Florida Alumni &amp; Friends Social</td>
<td>12-Mar</td>
<td>7:00 PM to 9:00 PM</td>
<td>Sheraton</td>
<td>Camelback B</td>
<td>O</td>
</tr>
<tr>
<td><strong>Committee &amp; Business Meetings</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>REWAS 2019 Organizing Team Meeting</td>
<td>12-Mar</td>
<td>6:45 AM to 7:45 AM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
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www.tms.org/TMS2018
## CALENDAR OF EVENTS

### Event / Function | Date | Time | Facility | Room | Access
--- | --- | --- | --- | --- | ---
Membership & Student Development Committee Meeting | 12-Mar | 8:15 AM to 9:45 AM | Sheraton | Maryvale A | R
TMS Executive Committee Meeting | 12-Mar | 10:00 AM to 11:00 AM | Sheraton | Arcadia Boardroom | R
EPD Council Meeting | 12-Mar | 1:00 PM to 3:00 PM | Sheraton | Arcadia Boardroom | I
Integrated Computational Materials Engineering Committee Meeting | 12-Mar | 1:15 PM to 2:30 PM | PCC | 221A | O
Powder Materials Committee Meeting | 12-Mar | 1:15 PM to 2:30 PM | PCC | 225A | O
International Affairs Committee Meeting | 12-Mar | 3:00 PM to 4:30 PM | Sheraton | Arcadia Boardroom | I
ICSMA18 Organizing Committee Meeting | 12-Mar | 3:00 PM to 5:00 PM | Sheraton | Maryvale A | I
Superalloys 2020 Organizing Committee Meeting | 12-Mar | 5:30 PM to 7:00 PM | Sheraton | Maryvale A | I
Advanced Characterization, Testing and Simulation Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 122B | O
Biomaterials Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 225B | O
Chemistry and Physics of Materials Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 128A | O
Solidification Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 232B | O
Steels Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 121C | O
Surface Engineering Committee Meeting | 12-Mar | 6:00 PM to 7:00 PM | PCC | 227A | O
Materials Innovation Committee Meeting | 12-Mar | 6:00 PM to 7:30 PM | Sheraton | Camelback A | R
Nuclear Materials Committee Meeting | 12-Mar | 6:00 PM to 7:30 PM | PCC | 102A | O
Shaping and Forming Committee Meeting | 12-Mar | 6:00 PM to 7:30 PM | PCC | 103B | O
Composite Materials Committee Meeting | 12-Mar | 6:30 PM to 7:30 PM | PCC | 102C | O
Refractory Metals & Materials Committee Meeting | 12-Mar | 6:30 PM to 7:30 PM | PCC | 124A | O
LMD Council Meeting | 12-Mar | 6:30 PM to 8:30 PM | Sheraton | Encanto B | I
3DMS 2018 Organizing Committee Meeting | 12-Mar | 7:00 PM to 8:00 PM | PCC | 122B | I
Alloy Phases Committee Meeting | 12-Mar | 7:00 PM to 8:30 PM | PCC | 127C | O
Computational Materials Science & Engineering Committee Meeting | 12-Mar | 7:30 PM to 8:30 PM | PCC | 102B | O

### Tuesday, March 13

#### All-Conference Events

| Event / Function | Date | Time | Facility | Room | Access |
--- | --- | --- | --- | --- | ---|
Presenters’ Coffee | 13-Mar | 7:00 AM to 8:00 AM | PCC | Hall E | O
Registration | 13-Mar | 7:00 AM to 5:30 PM | PCC | 300 Level - North | O
Programming Support Desk | 13-Mar | 7:00 AM to 6:00 PM | PCC | Outside Hall E | O
TMS Member Welcome Center | 13-Mar | 7:00 AM to 6:00 PM | PCC | 300 Level - North | O
Technical Programming Sessions | 13-Mar | 8:30 AM to 5:30 PM | See Technical Program section for complete schedule and locations | O
Morning Break | 13-Mar | 9:50 AM to 10:30 AM | PCC | Various | O
Afternoon Break | 13-Mar | 3:20 PM to 4:00 PM | PCC | Various | O

#### Exhibition

| Event / Function | Date | Time | Facility | Room | Access |
--- | --- | --- | --- | --- | ---|
TMS2018 Exhibition | 13-Mar | 11:00 AM to 7:30 PM | PCC | Hall CD | O
Lunch in the Exhibit Hall | 13-Mar | 11:30 AM to 1:30 PM | PCC | Hall CD | T
Poster Session II Set-up | 13-Mar | 12:00 PM to 2:00 PM | PCC | Hall CD | O
Poster Session II Gallery Viewing | 13-Mar | 2:00 PM to 6:00 PM | PCC | Hall CD | O
Exhibit Hall Happy Hour & Poster Session II Presentations | 13-Mar | 6:00 PM to 7:30 PM | PCC | Hall CD | O

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<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster Session II Dismantle</td>
<td>13-Mar</td>
<td>7:30 PM to 7:45 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
</tbody>
</table>

## Student & Young Professional Functions

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Professional Tutorial Luncheon</td>
<td>13-Mar</td>
<td>12:00 PM to 12:45 PM</td>
<td>PCC</td>
<td>105BC</td>
<td>T</td>
</tr>
<tr>
<td>Young Professional Tutorial Lecture</td>
<td>13-Mar</td>
<td>12:45 PM to 2:00 PM</td>
<td>PCC</td>
<td>105BC</td>
<td>O</td>
</tr>
<tr>
<td>Student Career Forum</td>
<td>13-Mar</td>
<td>2:00 PM to 4:00 PM</td>
<td>PCC</td>
<td>221A</td>
<td>O</td>
</tr>
</tbody>
</table>

## Social Functions

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPD/MPMD Luncheon</td>
<td>13-Mar</td>
<td>12:00 PM to 2:00 PM</td>
<td>PCC</td>
<td>106ABC</td>
<td>T</td>
</tr>
<tr>
<td>CDSM Banquet</td>
<td>13-Mar</td>
<td>6:00 PM to 8:30 PM</td>
<td>Offsite</td>
<td>Canyon Café</td>
<td>T</td>
</tr>
</tbody>
</table>

## Committee & Business Meetings

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Conversion and Storage Committee Meeting</td>
<td>13-Mar</td>
<td>7:30 AM to 8:30 AM</td>
<td>PCC</td>
<td>229B</td>
<td>O</td>
</tr>
<tr>
<td>Fellow Award Subcommittee Meeting</td>
<td>13-Mar</td>
<td>7:30 AM to 8:30 AM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>R</td>
</tr>
<tr>
<td>TMS Foundation Board of Trustees Meeting</td>
<td>13-Mar</td>
<td>7:30 AM to 10:00 AM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>I</td>
</tr>
<tr>
<td>Young Professionals Committee Meeting</td>
<td>13-Mar</td>
<td>8:15 AM to 9:45 AM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>O</td>
</tr>
<tr>
<td>Honors &amp; Professional Recognition Committee Meeting</td>
<td>13-Mar</td>
<td>8:30 AM to 9:30 AM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>R</td>
</tr>
<tr>
<td>Professional Development Committee Meeting</td>
<td>13-Mar</td>
<td>10:30 AM to 12:00 PM</td>
<td>Sheraton</td>
<td>Camelback B</td>
<td>R</td>
</tr>
<tr>
<td>TMS Past Presidents Meeting</td>
<td>13-Mar</td>
<td>11:30 AM to 1:00 PM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>I</td>
</tr>
<tr>
<td>Aluminum Course Planning Session</td>
<td>13-Mar</td>
<td>12:00 PM to 1:30 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>SMD Council Meeting</td>
<td>13-Mar</td>
<td>12:00 PM to 2:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
<tr>
<td>Electronic Packaging and Interconnection Materials Committee Meeting</td>
<td>13-Mar</td>
<td>12:30 PM to 1:30 PM</td>
<td>PCC</td>
<td>226C</td>
<td>O</td>
</tr>
<tr>
<td>Education Committee Meeting</td>
<td>13-Mar</td>
<td>12:30 PM to 2:00 PM</td>
<td>Sheraton</td>
<td>Camelback B</td>
<td>O</td>
</tr>
<tr>
<td>Extraction 2018 Organizing Committee Meeting</td>
<td>13-Mar</td>
<td>4:00 PM to 5:00 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>Superalloy 718 Organizing Committee Meeting</td>
<td>13-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>I</td>
</tr>
<tr>
<td>Content Development and Dissemination Committee Meeting</td>
<td>13-Mar</td>
<td>5:00 PM to 7:00 PM</td>
<td>Sheraton</td>
<td>Camelback B</td>
<td>I</td>
</tr>
<tr>
<td>Corrosion and Environmental Effects Committee Meeting</td>
<td>13-Mar</td>
<td>6:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>227A</td>
<td>O</td>
</tr>
<tr>
<td>Energy Committee Meeting</td>
<td>13-Mar</td>
<td>6:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>224B</td>
<td>O</td>
</tr>
<tr>
<td>Nanomaterials Committee Meeting</td>
<td>13-Mar</td>
<td>6:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>101B</td>
<td>O</td>
</tr>
<tr>
<td>Titanium Committee Meeting</td>
<td>13-Mar</td>
<td>6:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>231C</td>
<td>O</td>
</tr>
<tr>
<td>High Temperature Alloys Committee Meeting</td>
<td>13-Mar</td>
<td>6:00 PM to 7:30 PM</td>
<td>Sheraton</td>
<td>Maryvale A</td>
<td>O</td>
</tr>
</tbody>
</table>

The Minerals, Metals & Materials Society, Inc. (TMS), in accordance with its bylaws (Article II, Section 2.6, and Article III, Section 3.7) will hold its 2018 Annual Meeting of the Membership with an open Board of Directors Meeting, on Thursday, March 15, 2018, from 8:00 a.m. to 8:30 a.m. in the Camelback A room of the Sheraton Grand Phoenix during the TMS 2018 Annual Meeting & Exhibition. All TMS members are welcome to attend this meeting.
<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPMD Council Meeting</td>
<td>13-Mar</td>
<td>6:30 PM to 8:30 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
<tr>
<td>Magnetic Materials Committee Meeting</td>
<td>13-Mar</td>
<td>7:00 PM to 8:00 PM</td>
<td>PCC</td>
<td>229A</td>
<td>O</td>
</tr>
</tbody>
</table>

### Wednesday, March 14

#### All-Conference Events

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenters' Coffee</td>
<td>14-Mar</td>
<td>7:00 AM to 8:00 AM</td>
<td>PCC</td>
<td>Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Registration</td>
<td>14-Mar</td>
<td>7:00 AM to 5:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>TMS Member Welcome Center</td>
<td>14-Mar</td>
<td>7:00 AM to 5:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>Programming Support Desk</td>
<td>14-Mar</td>
<td>7:00 AM to 6:00 PM</td>
<td>PCC</td>
<td>Outside Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Technical Programming Sessions</td>
<td>14-Mar</td>
<td>8:30 AM to 5:30 PM</td>
<td>See Technical Program section for complete schedule and locations</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Morning Break</td>
<td>14-Mar</td>
<td>9:50 AM to 10:30 AM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
<tr>
<td>Scientific Publishing Workshop: Excelling as an Author, Reviewer, or Editor</td>
<td>14-Mar</td>
<td>2:30 PM to 5:00 PM</td>
<td>PCC</td>
<td>105BC</td>
<td>O</td>
</tr>
<tr>
<td>Afternoon Break</td>
<td>14-Mar</td>
<td>3:20 PM to 4:00 PM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
</tbody>
</table>

#### Exhibition

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMS2018 Exhibition</td>
<td>14-Mar</td>
<td>10:00 AM to 2:00 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>O</td>
</tr>
<tr>
<td>Lunch in the Exhibit Hall</td>
<td>14-Mar</td>
<td>11:30 AM to 1:30 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>T</td>
</tr>
<tr>
<td>Exhibitor Move-out</td>
<td>14-Mar</td>
<td>2:00 PM to 7:00 PM</td>
<td>PCC</td>
<td>Hall CD</td>
<td>R</td>
</tr>
</tbody>
</table>

#### Social Functions

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh Coffee, Fresh Ideas: Diversity and Inclusion Breakfast</td>
<td>14-Mar</td>
<td>7:00 AM to 8:00 AM</td>
<td>PCC</td>
<td>106ABC</td>
<td>T</td>
</tr>
<tr>
<td>LMD Luncheon</td>
<td>14-Mar</td>
<td>12:00 PM to 2:00 PM</td>
<td>PCC</td>
<td>106ABC</td>
<td>T</td>
</tr>
<tr>
<td>JOM Advisor Mixer</td>
<td>14-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Camelback B</td>
<td>I</td>
</tr>
<tr>
<td>25th Foundation Anniversary VIP Reception</td>
<td>14-Mar</td>
<td>5:00 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Oculus</td>
<td>I</td>
</tr>
<tr>
<td>TMS-AIME Awards Reception</td>
<td>14-Mar</td>
<td>5:30 PM to 6:00 PM</td>
<td>Sheraton</td>
<td>Valley of the Sun Foyer</td>
<td>O</td>
</tr>
<tr>
<td>TMS2020 Program Planning Mixer</td>
<td>14-Mar</td>
<td>5:30 PM to 7:00 PM</td>
<td>Sheraton</td>
<td>Camelback A</td>
<td>I</td>
</tr>
<tr>
<td>TMS-AIME Awards Ceremony</td>
<td>14-Mar</td>
<td>6:00 PM to 7:30 PM</td>
<td>Sheraton</td>
<td>Valley of the Sun DE</td>
<td>O</td>
</tr>
<tr>
<td>TMS-AIME Awards Banquet</td>
<td>14-Mar</td>
<td>7:30 PM to 8:30 PM</td>
<td>Sheraton</td>
<td>Valley of the Sun ABC</td>
<td>T</td>
</tr>
</tbody>
</table>

#### Committee & Business Meetings

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Meeting</td>
<td>14-Mar</td>
<td>9:00 AM to 10:30 AM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>Extraction 20XX Meeting</td>
<td>14-Mar</td>
<td>11:30 AM to 12:30 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>FMD Council Meeting</td>
<td>14-Mar</td>
<td>12:00 PM to 2:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
<tr>
<td>TMS SMM Leadership Meeting</td>
<td>14-Mar</td>
<td>1:00 PM to 2:00 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
<tr>
<td>DGM - TMS Leadership Meeting</td>
<td>14-Mar</td>
<td>2:30 PM to 3:30 PM</td>
<td>Sheraton</td>
<td>Arcadia Boardroom</td>
<td>I</td>
</tr>
</tbody>
</table>

Legend:
- PCC = Phoenix Convention Center
- Sheraton = Sheraton Grand Phoenix
- O = Open to all attendees
- R = Restrictions Apply
- I = Invitation Only
- T = Ticketed Event, Pre-registration required
### CALENDAR OF EVENTS

<table>
<thead>
<tr>
<th>Event / Function</th>
<th>Date</th>
<th>Time</th>
<th>Facility</th>
<th>Room</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thursday, March 15</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>All-Conference Events</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presenters’ Coffee</td>
<td>15-Mar</td>
<td>7:00 AM to 8:00 AM</td>
<td>PCC</td>
<td>Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Registration</td>
<td>15-Mar</td>
<td>7:00 AM to 2:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>TMS Member Welcome Center</td>
<td>15-Mar</td>
<td>7:00 AM to 5:00 PM</td>
<td>PCC</td>
<td>300 Level - North</td>
<td>O</td>
</tr>
<tr>
<td>Programming Support Desk</td>
<td>15-Mar</td>
<td>7:00 AM to 6:00 PM</td>
<td>PCC</td>
<td>Outside Hall E</td>
<td>O</td>
</tr>
<tr>
<td>Technical Programming Sessions</td>
<td>15-Mar</td>
<td>8:30 AM to 5:30 PM</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Morning Break</td>
<td>15-Mar</td>
<td>9:50 AM to 10:30 AM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
<tr>
<td>Afternoon Break</td>
<td>15-Mar</td>
<td>3:20 PM to 4:00 PM</td>
<td>PCC</td>
<td>Various</td>
<td>O</td>
</tr>
<tr>
<td><strong>Committee &amp; Business Meetings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Annual Meeting of the Membership and Open Board of Directors Meeting</td>
<td>15-Mar</td>
<td>8:00 AM to 8:30 AM</td>
<td>Sheraton</td>
<td>Camelback A</td>
<td>O</td>
</tr>
<tr>
<td>TMS Board of Directors Meeting</td>
<td>15-Mar</td>
<td>8:30 AM to 1:00 PM</td>
<td>Sheraton</td>
<td>Encanto B</td>
<td>I</td>
</tr>
</tbody>
</table>

**PCC** = Phoenix Convention Center  
**Sheraton** = Sheraton Grand Phoenix  
O - Open to all attendees  
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I - Invitation Only  
T - Ticketed Event, Pre-registration required

---

**A NEW WORLD WIDE STRATEGIC PARTNERSHIP**

Visit us at booths 304 and 517

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**STAS** is a global leader in designing, fabricating and commercializing high-tech process equipment to improve productivity and the quality of molten aluminium.

---

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 [www.stas.com](http://www.stas.com)
## TECHNICAL COMMITTEE MEETING SCHEDULE

<table>
<thead>
<tr>
<th>Division</th>
<th>Date</th>
<th>Room Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraction &amp; Processing Division (EPD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division Council Meeting</td>
<td>Monday, March 12</td>
<td>SH – Encanto B</td>
<td>1:00 – 3:00 p.m.</td>
</tr>
<tr>
<td>Additive Manufacturing Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 230</td>
<td>5:30 – 7:00 p.m.</td>
</tr>
<tr>
<td>Energy Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 224B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Hydrometallurgy &amp; Electrometallurgy Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Camelback B</td>
<td>4:00 – 5:00 p.m.</td>
</tr>
<tr>
<td>Materials Characterization Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Encanto B</td>
<td>2:30 – 4:00 p.m.</td>
</tr>
<tr>
<td>Process Technology &amp; Modeling Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Laveen A</td>
<td>5:00 – 6:00 p.m.</td>
</tr>
<tr>
<td>Pyrometallurgy Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Camelback A</td>
<td>3:00 – 4:30 p.m.</td>
</tr>
<tr>
<td>Recycling &amp; Environmental Technologies Cmte</td>
<td>Sunday, March 11</td>
<td>SH- Estrella</td>
<td>1:30 – 3:00 p.m.</td>
</tr>
<tr>
<td><strong>Functional Materials Division (FMD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division Council Meeting</td>
<td>Wednesday, March 14</td>
<td>SH – Encanto B</td>
<td>12:00 – 2:00 p.m.</td>
</tr>
<tr>
<td>Additive Manufacturing Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 230</td>
<td>5:30 – 7:00 p.m.</td>
</tr>
<tr>
<td>Alloy Phases Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 127C</td>
<td>7:00 – 8:30 p.m.</td>
</tr>
<tr>
<td>Biomaterials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 225B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Chemistry &amp; Physics Of Materials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 128A</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Electronic Packaging &amp; Interconnection Mats Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 226C</td>
<td>12:30 – 1:30 p.m.</td>
</tr>
<tr>
<td>Energy Conversion &amp; Storage Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 229B</td>
<td>7:30 – 8:30 a.m.</td>
</tr>
<tr>
<td>Magnetic Materials Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 229A</td>
<td>7:00 – 8:00 p.m.</td>
</tr>
<tr>
<td>Nanomaterials Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 101B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Thin Films &amp; Interfaces Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Camelback A</td>
<td>5:00 – 6:00 p.m.</td>
</tr>
<tr>
<td><strong>Light Metals Division (LMD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division Council Meeting</td>
<td>Monday, March 12</td>
<td>SH – Encanto B</td>
<td>6:30 – 8:30 p.m.</td>
</tr>
<tr>
<td>Additive Manufacturing Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 230</td>
<td>5:30 – 7:00 p.m.</td>
</tr>
<tr>
<td>Aluminum Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Maryvale B</td>
<td>2:00 – 4:00 p.m.</td>
</tr>
<tr>
<td>Energy Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 224B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Magnesium Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 103B</td>
<td>1:30 – 3:00 p.m.</td>
</tr>
<tr>
<td>Recycling &amp; Environmental Technologies Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Estrella</td>
<td>1:30 – 3:00 p.m.</td>
</tr>
<tr>
<td><strong>Materials Processing &amp; Manufacturing Division (MPMD)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Division Council Meeting</td>
<td>Tuesday, March 13</td>
<td>SH – Encanto B</td>
<td>6:30 – 8:30 p.m.</td>
</tr>
<tr>
<td>Additive Manufacturing Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 230</td>
<td>5:30 – 7:00 p.m.</td>
</tr>
<tr>
<td>Computational Materials Science &amp; Engineering Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 102B</td>
<td>7:30 – 8:30 p.m.</td>
</tr>
<tr>
<td>Nanomechanical Materials Behavior Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 103B</td>
<td>6:00 – 7:30 p.m.</td>
</tr>
<tr>
<td>Phase Transformations Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Estrella</td>
<td>7:30 – 9:00 p.m.</td>
</tr>
<tr>
<td>Process Technology &amp; Modeling Cmte</td>
<td>Sunday, March 11</td>
<td>SH – Laveen A</td>
<td>5:00 – 6:00 p.m.</td>
</tr>
<tr>
<td>Shaping &amp; Forming Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 103B</td>
<td>6:00 – 7:30 p.m.</td>
</tr>
<tr>
<td>Solidification Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 232B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Surface Engineering Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 227A</td>
<td>6:00 – 7:00 p.m.</td>
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<tr>
<td><strong>Structural Materials Division (SMD)</strong></td>
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<tr>
<td>Division Council Meeting</td>
<td>Tuesday, March 13</td>
<td>SH – Encanto B</td>
<td>12:00 – 2:00 p.m.</td>
</tr>
<tr>
<td>Additive Manufacturing Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 230</td>
<td>5:30 – 7:00 p.m.</td>
</tr>
<tr>
<td>Advanced Characterization, Testing &amp; Simulation Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 122B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Alloy Phases Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 127C</td>
<td>7:00 – 8:30 p.m.</td>
</tr>
<tr>
<td>Biomaterials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 225B</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Chemistry &amp; Physics of Materials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 128A</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Composite Materials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 102C</td>
<td>6:30 – 7:30 p.m.</td>
</tr>
<tr>
<td>Corrosion &amp; Environmental Effects Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 227A</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>High Temperature Alloys Cmte</td>
<td>Tuesday, March 13</td>
<td>SH – Maryvale A</td>
<td>6:00 – 7:30 p.m.</td>
</tr>
<tr>
<td>Mechanical Behavior of Materials Cmte</td>
<td>Sunday, March 11</td>
<td>PCC – Room 103B</td>
<td>7:30 – 9:00 p.m.</td>
</tr>
<tr>
<td>Nuclear Materials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 102A</td>
<td>6:00 – 7:30 p.m.</td>
</tr>
<tr>
<td>Refractory Metals &amp; Materials Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 124A</td>
<td>6:30 – 7:30 p.m.</td>
</tr>
<tr>
<td>Steels Cmte</td>
<td>Monday, March 12</td>
<td>PCC – Room 121C</td>
<td>6:00 – 7:00 p.m.</td>
</tr>
<tr>
<td>Titanium Cmte</td>
<td>Tuesday, March 13</td>
<td>PCC – Room 231C</td>
<td>6:00 – 7:00 p.m.</td>
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</tbody>
</table>
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E-MAIL: ENERGOPROM@ENERGOPROM.RU
WWW.ENERGOPROM.RU/EN
TMS2018 ALL-CONFERENCE PLENARY

MATERIALS AND ICME AS AN ENABLER FOR SUSTAINABLE ENERGY AND INTERPLANETARY TRAVEL

Date: Monday, March 12  
Time: Noon to 1:00 p.m.  
Location: Phoenix Convention Center, West Ballroom 301

Materials challenges abound in the pursuit of interplanetary settlement and the transition to sustainable energy here on Earth. The new materials and manufacturing methods enabling these ambitious goals will need to make greater leaps in capability and timeframes never before achieved. Fortunately, materials engineering has also made great strides in the last decade, embracing the integration of computational methods and advanced systems design into a framework we now call Integrated Computational Materials Engineering (ICME).

Don’t miss this rare TMS Annual Meeting & Exhibition all-conference plenary session and the chance to preview a visionary future for materials science and engineering with one of the leaders in the computational materials design revolution.

Featured Speaker:  
Charlie Kuehmann  
*Tesla and SpaceX*

Charlie Kuehmann currently leads the materials engineering organizations at both Tesla and SpaceX, driving material solutions to enable the world’s transition to a sustainable future, the commercialization of space, and a multi-planetary civilization.

Kuehmann has been a leader in computational materials design since its inception, creating one of the first companies dedicated to commercializing this new technology. As a result, he’s innovated an array of alloys, including high-performance steels for race cars, aluminum alloys for aircraft, gear materials for helicopters, high-temperature alloys for turbine engines, and even bubble-gum. Kuehmann has more recently brought computational materials design technology to the consumer electronics industry, and through his current positions, to electric vehicles and spacecraft.

GET UP CLOSE WITH THE TECHNOLOGY

In support of the TMS2018 All-Conference Plenary, Tesla and Space X have coordinated a display of technologies related to Charlie Kuehmann’s talk, located at the entrance of the Exhibit Hall, Phoenix Convention Center, 300 Level North. While you are there, plan to explore the materials and manufacturing innovations presented inside the Exhibit Hall during TMS2018 Exhibition hours.
2ND INTERNATIONAL CONFERENCE ON COMPUTATIONAL DESIGN AND SIMULATION OF MATERIALS (CDSM 2018)

Co-located with TMS2018 and organized jointly by TMS and the Chinese Society for Metals (CSM), the 2nd International Conference on Computational Design and Simulation of Materials (CDSM 2018) focuses on computational simulation and modeling to accelerate materials discovery and design. All TMS2018 registrants are invited to attend CDSM’s technical programming, including the Monday afternoon plenary session.

PLENARY SESSION
Date: Monday, March 12
Time: 2:30 p.m.
Location: Phoenix Convention Center, Room 131B
Session Chair: Alan Luo, The Ohio State University

“Genomic Materials Design: From CALPHAD to Space”
Greg Olson, Northwestern University

“Theoretical Modeling and Atomistic Calculation Verifications of Size-dependent Mechanical and Thermal Behaviors in Nanomaterials”
Tong-Yi Zhang, Shanghai University

CDSM SYMPOSIA
Throughout the week, CDSM will hold the following symposia. More details are available in the technical presentation portion of this program.

Atomistic Simulations
This symposium will focus on simulation approaches, tools, and materials properties at the atomistic scale and will include presentations on state-of-the-art capabilities, challenges, and future directions.

Meso/Macroscale Simulations
Microstructural attributes to processing and property modeling of materials play a central role in materials design and multi-scale modeling. This symposium seeks to advance progress in this area through discussion of topics at scales above atoms, with a particular interest in integration of scales.

Computational Design of Materials
Optimal and robust design of materials involves selection of chemistry and processing for desired microstructure and targeted properties. In addition to tools and databases, uncertainty quantification is central for its broad acceptance—a topic of particular interest for this symposium.

CDSM 2018 BANQUET
Tickets required. Tickets must be purchased by Monday at 10:00 a.m. at the Registration Desk.
Date: Tuesday, March 13
Time: 6:00 p.m. to 8:30 p.m.
Location: Canyon Café in Phoenix, Arizona
Spend an evening with colleagues from CDSM 2018 at the Canyon Café in Phoenix, Arizona, located approximately .25 miles from the Phoenix Convention Center. Your banquet ticket includes a buffet-style dinner and a selection of coffee, tea, or soda beverages. In addition, each guest will receive one drink ticket for wine or beer.

CDSM 2018 ORGANIZING COMMITTEE
Chair: Zi-Kui Liu, Pennsylvania State University
Co-Chair: Alan Luo, The Ohio State University

Representing TMS:
• Raymundo Arroyave, Texas A&M University
• Suveen Mathaudhu, University of California, Riverside
• Panthea Sepehrband, Santa Clara University
• Katsuyo Thornton, University of Michigan
• Dallas Trinkle, University of Illinois
• Ting Zhu, Georgia Institute of Technology
• Mohsen Asle Zaeem, Missouri University of Science and Technology
• Richard Hennig, University of Florida

Representing CSM:
• Xinqu Chen, Institute of Metal Research
• Yong Du, Central South University
• Qing Jiang, Jilin University
• Dianzhong Li, Institute of Metal Research
• Chengjia Shang, University of Science and Technology, Beijing
• Tong-Yi Zhang, Shanghai University
**KEYNOTE SYMPOSIUM**

**ENERGY AND TRANSPORTATION FROM A EUROPEAN MATERIALS PERSPECTIVE**

This special keynote session of invited talks is organized by FEMS as part of its ongoing collaboration with TMS to support international collaboration on important science and engineering topics.

**Date:** Wednesday, March 14  
**Time:** 8:30 a.m. to 5:00 p.m.  
**Location:** Phoenix Convention Center, Room 228A  
**Organizer:** Brett Suddell, FEMS

### Morning Session

- **“Materials and Energy: The Need for a Systemic Approach”**  
  **Yves Bréchet,** Grenoble INP and High Commissioner to Atomic Energy, France

- **“A European Corporate R&D View: New Materials and Processes in Transportation and Energy”**  
  **Winfried Keiper,** Bosch Corporate Research, Germany

- **“Third Generation Solar Cells from Laboratory to Factory: Developing a Scale-up Route for Perovskite Solar Cells to Turn ‘Buildings into Power Stations’”**  
  **David Worsley,** Swansea University, United Kingdom

- **“European Efforts in the Development of High-Quality Metallic Components for Energy and Transport Applications”**  
  **David Jarvis,** HIPtec, Norway

### Afternoon Session

- **“Fatigue Micromechanisms and Failure Analysis of Rail Steels”**  
  **Donato Firrao,** DISAT, Politecnico di Torino, Italy

- **“Magnesium Alloys in Transportation: Hidden Champions?!”**  
  **Karl Kainer,** Helmholtz-Zentrum Geesthacht, Germany

- **“Recent Advances in Aluminum Product Development for Transportation”**  
  **Timothy Warner,** Constellium C-TEC, France

- **“Challenges for the Design of Ni-based SX Superalloys Components”**  
  **Jonathan Cormier,** Institut Pprime, ISAE-ENSMA, France

- **“Integrated Computational Materials Engineering (ICME) and Business Decision Support Systems (BDSS) in the Context of Open Innovation and Interdisciplinary Collaboration”**  
  **Donna Dykeman,** Granta Design, United Kingdom

Panel discussions moderated by Pedro Dolabella Portella will be held at the end of the morning and afternoon sessions.
UPCOMING TMS MEETINGS

For a complete listing of TMS meetings, visit: www.tms.org/Meetings

May 21–24, 2018 • Québec City, Québec, Canada
Discount Registration Deadline: March 21, 2018
www.tms.org/PSFE2018

July 23–24, 2018 • Santa Barbara, California, USA
Discount Registration Deadline: June 18, 2018
www.tms.org/Diversity2018

June 3–6, 2018 • Pittsburgh, Pennsylvania, USA
Discount Registration Deadline: April 30, 2018
www.tms.org/Superalloy718-2018

August 1–4, 2018 • Pittsburgh, Pennsylvania, USA
Discount Registration Deadline: June 4, 2018
www.tms.org/PEReview2018

June 10–13, 2018 • Helsingør (Elsinore), Denmark
Discount Registration Deadline: May 8, 2018
www.tms.org/3DMS2018

August 26–29, 2018 • Ottawa, Canada
Discount Registration Deadline: June 26, 2018
www.extractionmeeting.org

June 18–21, 2018 • Gaithersburg, Maryland, USA
Benchmark Tests Deadline: May 18, 2018
Discount Registration Deadline: May 25, 2018
www.tms.org/AMBench2018

October 14–18, 2018 • Columbus, Ohio, USA
Abstract Submission Deadline: March 15, 2018
www.matscitech.org

March 10-14, 2019
San Antonio, Texas, USA
www.tms.org/TMS2019

www.tms.org/Meetings
**FEATURED SESSION**

**Air Force Listening Session**  
**Date:** Sunday Afternoon, March 11  
**Location:** Phoenix Convention Center, Room 121A  
**Sponsored by:** U.S. Air Force Research Laboratory

During this special session, the U.S. Air Force Research Laboratory (AFRL) invites all TMS2018 attendees to weigh in on funding priorities and future research directions during this interactive session with AFRL leadership. TMS2018 was selected as one of the venues for a series of information gathering sessions that the AFRL has scheduled as part of a year-long science and technology review.

Check [www.tms.org/TMS2018](http://www.tms.org/TMS2018) for details on sharing your ideas and perspectives as part of this process.

**KEYNOTE SESSION**

**Magnesium Technology 2018**  
**Date:** Monday, March 12  
**Time:** 8:00 a.m. to 11:30 a.m.  
**Location:** Phoenix Convention Center, Room 224A  
**Sponsored by:** TMS Light Metals Division, TMS Magnesium Committee  
**Organizers:** Dmytro Orlov, Lund University; Vineet Joshi, Pacific Northwest National Laboratory; Kiran Solanki, Arizona State University; Neale Neelameggham, Ind LLC

- “Mg Alloys: Challenges and Achievements in Controlling Performance, and Future Application Perspectives”  
  **Karl Kainer**  
  MagIC—Magnesium Innovation Centre, Helmholtz-Zentrum Geesthacht, Germany

- “Solute/Stacking Fault Energies in Mg and Implications for Ductility”  
  **William Curtin**  
  École Polytechnique Fédérale de Lausanne, Switzerland

- “Recent Developments in Magnesium Alloy Corrosion Research”  
  **Nick Birbilis**  
  Monash University, Australia

**2018 Light Metals Keynote Session:**  
**Sustainability in the Aluminum Industry: Climate Neutral Industry with Zero Emissions and Zero Waste?**  
**Date:** Monday, March 12  
**Time:** 8:30 a.m. to 11:30 a.m.  
**Location:** Phoenix Convention Center, Room 222  
**Sponsored by:** TMS Light Metals Division, TMS Aluminum Committee  
**Organizer:** Arne Ratvik, SINTEF

- “Climate and Energy Efficient Aluminium Production”  
  **Johannes Aalbu**  
  Hydro Aluminium, Norway

- “Aluminum Recycling – Can We be Zero Emissions and Zero Waste?”  
  **Ray D. Peterson**  
  Real Alloy, USA

- “Towards Sustainable Solutions for Processing of Spent Potlining”  
  **Stephan Broek**  
  Hatch Ltd., Canada

- “Challenges and Progress in Environment Protection in China’s Aluminum Metallurgy”  
  **Wanchao Liu**  
  Chalco Zhengzhou Non-ferrous Metal Research Institute Co. Ltd, China
Seven symposia are planned on additive manufacturing (AM) topics at TMS2018. Tying them all together will be the Additive Manufacturing Keynote Session, a high-level overview of the state of additive manufacturing throughout the world and in various industries.

**Additive Manufacturing**

**Date:** Monday, March 12  
**Time:** 2:30 p.m. to 6:00 p.m.  
**Location:** Phoenix Convention Center, Room 231

“Tackling the GHG Footprint of the Aluminium Industry – Status, Challenges and Technological Solutions”  
**Pascal Lavoie**, Light Metals Research Centre, The University of Auckland, New Zealand

“Additive Manufacturing of Ceramics”  
**Suman Das**, Georgia Institute of Technology, USA

“Additive Manufacturing of Metals: Current Status and Future Outlook”  
**Todd Palmer**, Pennsylvania State University, USA

“Enabling Next Generation Additive Manufacturing: the 3D Deposition of Functional Materials for the Additive Manufacturing of Smart Devices - A UK perspective”  
**Richard Hague**, University of Nottingham, United Kingdom

“Metal Additive Manufacturing in Australasia and China”  
**Ma Qian**, Royal Melbourne Institute of Technology, Australia

“Additive Manufacturing Technologies, Applications, Markets and Opportunities”  
**Ming Leu**, Missouri University of Science and Technology, USA

**Materials Innovation: Big Data and Machine Learning for Materials**

**Date:** Tuesday, March 13  
**Time:** 8:30 a.m. to Noon  
**Location:** Phoenix Convention Center, Room 129B

“Big Data for Materials R&D, Deployment, and Lifecycle”  
**Jed W. Pitera**, IBM Research – Almaden, USA

“How Materials Science Can Capitalize on Advances in Computer Science through Data Science and Machine Learning”  
**Elizabeth A. Holm**, Carnegie Mellon University, USA

“Perspectives on Data Intensive Science from the DOE Office of Science”  
**Laura Biven**, U.S. Department of Energy, USA

“Going Smart and Deep on Materials”  
**Ian Foster**, University of Chicago and Argonne National Laboratory, USA

“Polymers in Additive Manufacturing: Survey and Opportunities”  
**Dave Rosen**, Georgia Institute of Technology, USA / Singapore University of Design, Singapore

“Polymers in Additive Manufacturing: Survey and Opportunities”  
**Dave Rosen**, Georgia Institute of Technology, USA / Singapore University of Design, Singapore

“Metal Additive Manufacturing in Australasia and China”  
**Ma Qian**, Royal Melbourne Institute of Technology, Australia
KEYNOTE & FEATURED SESSIONS

FEATURED SESSION

TMS2018 Acta Materialia Symposium
Date: Tuesday, March 13
Time: 3:15 p.m. to 5:00 p.m.
Location: Phoenix Convention Center, Room 129B

“Acta Materialia Gold Medal Lecture: Formation of Deformation Twins in Metallic Crystals”
Subhash Mahajan
University of California, Davis, USA

Nikhilesh Chawla
Arizona State University, USA

Julie Christodoulou
U.S. Office of Naval Research, USA

MATERIALS EXPLORERS™

Inspire the next generation of scientists and engineers.
Volunteer with Materials Explorers™—TMS’s new STEM educational outreach program.

Here’s how to get started:

1. Participate in live demonstrations of the Materials Explorers™ curriculum and talk with the TMS volunteers who developed it.

   Where: TMS Member Welcome Center
   Phoenix Convention Center, 300 Level North
   When: Sunday, March 11: 10:00 a.m. to 12:00 p.m.
   Monday, March 12: 10:00 a.m. to 11:00 p.m.; 2:30 p.m. to 3:30 p.m.

2. Add your name to the growing list of TMS member volunteers who are interested in visiting classrooms, either in person or by video conference, at the TMS Member Welcome Center or Volunteer Leadership Lounge.

3. Visit www.materials-explorers.org to learn more about the program and access volunteer resources.

Questions? Contact materials-explorers@tms.org.
Learn about more success stories made possible by the TMS Foundation—and how you can be part of future ones.

“I am honored and grateful to receive this prestigious award. The TMS Foundation’s mission to support and enrich the development of professionals in the minerals, metals, and materials community and to provide avenues for professionals to communicate and engage, is truly impactful. I am very excited to be part of the TMS community and to further its important mission.”

—Sung Woo Nam, University of Illinois 2018 Early Career Faculty Fellow

Help us celebrate mentors during the TMS Foundation’s 25th anniversary year! In 2018, we’re honoring the roles that mentors play in the development of young scientists and engineers. Stop by the TMS Member Welcome Center, located in the Phoenix Convention Center, 300 Level – North, to add the name(s) of your mentor to the TMS “family tree.”
COUPLING ADVANCED CHARACTERIZATION AND MODELING TOOLS FOR UNDERSTANDING FUNDAMENTAL PHASE TRANSFORMATION MECHANISMS

A Materials Processing & Manufacturing Division Symposium in Honor of Hamish Fraser

Dates: Tuesday, March 13 and Wednesday, March 14
Symposium Location: Phoenix Convention Center, Room 127A
Organizers: Gregory B Thompson, University of Alabama; Sudarshanam S. Babu, The University of Tennessee, Knoxville; Peter Collins, Iowa State University; Soumya Nag, GE Global Research; Rajarshi Banerjee, University of North Texas

In celebration of Professor Hamish Fraser’s 70th birthday and his career-long achievements in the fields of phase transformations, microstructure-structure property relationships, and advanced electron microscopy, this symposium will bring together experts in each area to address current and developing topics in these respective fields. These invited talks will cover a broad spectrum of available advanced characterization and modeling tools that are being employed for addressing fundamental phase transformation mechanisms. The symposium will have dedicated sessions that emphasize phase transformations in non-ferrous alloys, such as titanium-based alloys and intermetallics, areas in which Fraser has made pioneering contributions. Other sessions will address phase transformation issues at different length scales, both in bulk and in nanostructured materials, and the use of advanced electron microscopy to reveal the underlying mechanisms of phase stability and transformation pathways in these materials.

MAGNESIUM ALLOY DEVELOPMENT

A Light Metals Division Symposium in Honor of Karl Kainer

Dates: Tuesday, March 13 and Wednesday morning, March 14
Symposium Location: Phoenix Convention Center, Room 223
Poster Session Date: Monday, March 12 at 6:00 p.m.
Poster Session Location: Phoenix Convention Center, Hall CD
Organizers: Norbert Hort, Helmholtz-Zentrum Geesthacht; Alan A. Luo, The Ohio State University

Magnesium alloys play a key role as lightweight materials for automotive, aerospace, 3C industries and even as a biodegradable material for medical implants. However, each of these areas of applications has its own requirements on the property profile. Therefore the alloys have to be designed according to the required property profile. This has to cover the influence of alloys e.g. on mechanical properties, corrosion behavior, deformability etc. but also on processing steps. Additionally there is a need in prediction performance of alloys and to validate this with appropriate computational approaches. The scope of this symposium includes the description of magnesium alloy design from the selection of alloying elements, processing steps towards selected applications, the performance of alloys during service and how they get recycled. These real-life approaches will be accompanied by modelling and simulation approaches to predict the microstructure and properties.
MECHANICAL CHARACTERISTICS AND APPLICATION PROPERTIES OF METALS AND NON-METALS FOR TECHNOLOGY

*An Extraction & Processing Division Symposium in Honor of Donato Firrao*

**Dates:** Monday, March 12 and Tuesday, March 13  
**Symposium Location:** Phoenix Convention Center, Room 123  
**Poster Session Date:** Tuesday, March 13 at 6:00 p.m.  
**Poster Session Location:** Phoenix Convention Center, Hall CD  
**Organizers:** Shadia Jamil Ikhmayies, Al Isra University; Jiann-Yang Hwang, Michigan Technological University; Bowen Li, Michigan Technological University; Pasquale Russo Spena, Free University of Bozen-Bolzano

This symposium will concentrate on physical and mechanical metallurgy and surface heat treatments, aircraft accidents, fractures, and failure analysis. It will focus on materials for technological applications—such as metals, polymers, ceramics, composites, and amorphous—and on mechanical characteristics and application properties of metals and nonmetals usually employed in technology. Bulk and surface transformations due to thermal and thermochemical treatments applied to steels, cast irons, aluminum, and copper alloys will be covered, and sessions will be devoted to standard and non-destructive testing methods on materials.

METAL-MATRIX COMPOSITES INNOVATIONS, ADVANCES AND APPLICATIONS

*A Structural Materials Division Symposium in Honor of William C. Harrigan Jr.*

**Dates:** Monday, March 12 and Tuesday, March 13  
**Symposium Location:** Phoenix Convention Center, Room 121A  
**Poster Session Date:** Tuesday, March 13 at 6:00 p.m.  
**Poster Session Location:** Phoenix Convention Center, Hall CD  
**Organizers:** Srivatsan S. Tirumalai, The University of Akron; Yuzheng Zhang, Gamma Alloys; William Harrigan, Gamma Technology, LLC

This symposium is being held in honor of Dr. William C. Harrigan, Jr., to bring to light his outstanding contributions resulting from dedicated, diligent, and dynamic contributions in the domains spanning processing, characterization, property evaluation, failure analysis, applications, and large-scale commercialization. This inter-disciplinary symposium will bring together developments from the onset of initiation to current state-of-the-art on all aspects related to the processing, fabrication, characterization, mechanical property evaluation, failure analysis, and potentially viable choice for both existing and emerging applications. The family of composites span the entire spectrum of metals including the intermetallics. This symposium will serve as a forum for presenting advances on aspects both related and relevant to materials processing, fabrication, characterization, quantification, both by way of properties and failure, by both researchers and engineers working in industry, national research laboratories, and academia.

Invited papers from leading-edge academic and industrial research settings will provide a lucid and comprehensive overview of the current status and potential future directions for both research and applications. Contributed papers cover specific problems in the same areas, with topics including metals and metal-matrix composites, nano-metal based composites, and intermetallic-based composites.
**LEADERSHIP & PROFESSIONAL SKILLS SESSIONS**

**TMS101: FUNDAMENTALS OF TMS**

**Date:** Sunday, March 11  
**Time:** 3:00 p.m. to 4:00 p.m.  
**Location:** Phoenix Convention Center, Room 121B  
**Speakers:** Megan Cordill, Erich Schmid Institute; Jeffrey Fergus, Auburn University; James C. Foley, Los Alamos National Laboratory and incoming TMS Vice President; Clarissa Yablinsky, Los Alamos National Laboratory

Want to get more involved in TMS, but don't know where to start? Attend TMS 101: Fundamentals of TMS. This one-hour presentation will provide a brief overview of how TMS works and a concise, practical explanation of how you can get more involved in the society's activities. Led by experienced TMS volunteers, TMS 101 will help you to take advantage of the many networking and professional development opportunities within the organization.

This session is open to all TMS2018 attendees but will be especially valuable to new members, international members, and graduate students.

**LOOKING THROUGH THE KALEIDOSCOPE: DISCOVERING YOUR PATH TO LEADERSHIP**

**Date:** Tuesday, March 13  
**Time:** 8:30 a.m. to 5:30 p.m.  
**Location:** Phoenix Convention Center, Room 124B  
**Organizers:** Emily Bautista, Mackenzie Jones, Thomas Maulbeck, and Rose Roberts, Virginia Tech

Sponsored by the TMS Education Committee, this special symposium will highlight effective leadership methods in order to enable students, as well as early-career and well-established professionals, to better pursue opportunities in leadership. Specifically, it aims to address the barriers to leadership perceived by students and early-career professionals and to equip current and future leaders with relevant tools to improve their own leadership abilities. The symposium will focus on empowering the audience with comprehensive insight into the multiple facets of leadership, allowing attendees to build their own leadership repertoires and incite change in leadership roles and techniques.

**MEET A MENTOR**

**Date:** Monday, March 12  
**Time:** 5:00 p.m. to 6:30 p.m.  
**Location:** Phoenix Convention Center, Room 105C

Seasoned professionals representing a combination of academic, government and industry career backgrounds will lead small discussion groups of young professionals and students embarking on their professional material science careers. Mentors from a variety of technical, career, and social backgrounds will be on hand to answer questions and provide guidance and advice to mentees. Advance online reservations are recommended for this program. Visit the Meet a Mentor section of the TMS2018 website at www.tms.org/TMS2018.

**SCIENTIFIC PUBLISHING WORKSHOP: EXCELING AS AN AUTHOR, REVIEWER, OR EDITOR**

**Date:** Wednesday, March 14  
**Time:** 2:30 p.m. to 5:00 p.m.  
**Location:** Phoenix Convention Center, Room 105BC  
**Speakers:** Michele Manuel, University of Florida; Suveen Mathaudhu, University of California, Riverside; Eric Taleff, University of Texas, Austin; Tresa Pollock, University of California, Santa Barbara

Many scientists and engineers are expected to publish papers and contribute to the literature of their field as part of their careers. This session will begin by providing tips for developing and submitting publishable content to technical journals. For those who wish to dive a little deeper into the publishing process, this workshop will also look at the activities of serving as a reviewer and editor for technical journals and will conclude with a panel discussion that offers participants the opportunity to ask questions of a broad range of professionals active in scientific publishing. This comprehensive overview of the publishing process will benefit anyone who aspires to write for, review for, or edit a technical journal, as well as anyone already active in these roles. Open to all TMS2018 attendees.

**YOUNG PROFESSIONALS COMMITTEE MEETING**

**Date:** Tuesday, March 13  
**Time:** 8:15 a.m. to 9:45 a.m.  
**Location:** Sheraton Grand Phoenix, Encanto B

The mission of the Young Professionals Committee is to create opportunities and provide avenues for young professionals to increase their involvement in TMS. This committee meeting is open to all TMS members, age 40 or younger, who have graduated.
Manufacturing the Circular Materials Economy
Join this trans-disciplinary conference, co-located with TMS2019, to showcase your research at the intersection of material science, metallurgy, and sustainability.

New! Lightweight Metals Programming
Organized by the German Metals Society (DGM) and TMS.

Bladesmithing Is Back
Rules and competition details now available on the 2019 TMS Bladesmithing Competition.

www.tms.org/TMS2019 See You in San Antonio!
**MONDAY, MARCH 12**

**Structural Materials Division Luncheon Lecture**

*Date and Time:* Monday, March 12, 1:00 p.m. to 2:30 p.m.

*Location:* Phoenix Convention Center, Room 106ABC

**Speaker:** Somnath Ghosh, Johns Hopkins University

**Lecture Title:** “Advances in Computational Mechanics and Computational Materials Science for Multi-Scale Fatigue Prediction”

**About the Topic:** This talk will introduce an approach to the development of a multi-scale computational framework for physics-based, multiscale modeling of fatigue crack nucleation and evolution in polycrystalline metallic materials, with a specific focus on titanium alloys. The talk will begin with methods for generating 3D statistically equivalent representative virtual images and representative volume elements from experiments on material characterization. An experimentally validated crystal plasticity finite element (CPFE) model will be discussed for predicting microstructural deformation under monotonic and cyclic loading. The CPFE simulations will provide a platform for the development of a physics-based crack nucleation model that accounts for microstructural inhomogeneity. Accelerated simulations for a large number of cycles leading to fatigue crack nucleation will be accomplished by a wavelet transformation based multi-time scaling (WATMUS) algorithm. This method significantly enhances computational efficiency in comparison with conventional single time-scale integration methods. Subsequently, the development of parametrically homogenized constitutive models (PHCM) will be discussed for macroscopic analysis. The PHCM explicitly accounts for microstructural morphology and crystallography through model parameters in the constitutive functions. The talk will conclude with a case study on the necessity of multi-scale models for predicting fatigue crack nucleation.

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**Extraction & Processing Division Distinguished Lecture**

*Date and Time:* Monday, March 12, 8:00 a.m.

*Location:* Phoenix Convention Center, Room 228A

**Speaker:** Geoffrey Brooks, Swinburne University of Technology

**Lecture Title:** “The Revolutions Ahead in Pyrometallurgy”

**About the Topic:** The pyrometallurgical production of metals has undergone major technological development over the last fifty years. However, important technological and scientific challenges remain, in particular in developing high productivity routes to light metals and in utilizing renewable energy in metals production. There has been considerable progress in developing new pyrometallurgical routes for aluminum, magnesium, and titanium over the last decade. The presenter and his co-workers have made significant progress in developing a new carbothermic route to magnesium and in evaluating alternate routes to aluminum. In this work, a combination of computational modelling techniques and novel laboratory apparatus has been used to test and optimize new process concepts. In designing a supersonic quenching apparatus for magnesium vapors, models that combine computational fluid dynamics and condensation kinetics were used to optimize the design. This combination of modelling and novel laboratory scale testing is also evident in the presenter’s works on developing solar thermal routes to metals production, where a unique solar simulator has been developed for testing reactor concepts. Research groups in Europe and North America have been combining both challenges by researching solar thermal routes to light metals production.

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*This lecture is open to all meeting attendees, but only those who purchased tickets in advance will receive a catered lunch. Luncheon tickets may be purchased at the Registration Desk until 10:00 a.m. on Sunday, March 11.*
William Hume-Rothery Award
Date and Time: Monday, March 12, 8:00 a.m.
Location: Phoenix Convention Center, Room 127C

Speaker: Zi-Kui Liu, The Pennsylvania State University
Lecture Title: “Computational Thermodynamics of Materials and Its Applications”

About the Topic: Thermodynamics is a science concerning the state of a system, whether it is stable, metastable or unstable, when interacting with the surroundings. Computational thermodynamics enables quantitative calculation of thermodynamic properties as a function of both external conditions and internal configurations, in terms of first and second derivatives of energy with respect to either potentials or molar quantities. In this presentation, the author’s experience on thermodynamics and computational thermodynamics will be discussed along with their applications, particularly the calculations of thermodynamic properties at finite temperatures and diffusion coefficients using density functional theory, the usefulness of Maxwell relations among the second derivatives in predicting critical phenomenon, and materials design. The significance of second derivatives with respect to one molar quantity and one potential will also be examined. Finally, the author’s perspectives on challenges and opportunities in computational thermodynamic will be presented.

Institute of Metals/Robert Franklin Mehl Award
Date and Time: Monday, March 12, 9:50 a.m.
Location: Phoenix Convention Center, Room 225B

Speaker: Marc André Meyers, University of California, San Diego
Lecture Title: “Biological Materials Science: Challenges and Opportunities”

About the Topic: Biological materials science is a new and vibrant field of materials science and engineering. Although biologists have been studying organisms for centuries, it is only recently that materials scientists have started to use their fantastic experimental, computational, and analytical arsenal of tools to reveal new features. We present the Arzt heptahedron, which defines seven unique and defining characteristics of biological materials. The plethora of different structures and mechanical properties of biological materials is systematized through a new paradigm: eight structural design elements, which are motifs appearing on different species and scales, and which enable analytical treatment and lead to enhanced understanding. We have applied this approach to approximately twenty different organisms. We illustrate our approach by applying this knowledge to the toucan beak, rabbit and pig skin, fish scales, and feathers. It is fascinating to see that characterization techniques such as optical, transmission and scanning electron, and atomic force microscopy, SAXS, Micro and Nano CT, and mechanical testing techniques such as nanoindentation, tensile and compressive testing are helping us to better understand these complex structures. Current efforts at bioinspired materials and designs are also discussed.

TUESDAY, MARCH 13
Extraction & Processing Division/Materials Processing & Manufacturing Division Luncheon*
Date and Time: Tuesday, March 13, Noon to 2:00 p.m.
Location: Phoenix Convention Center, Room 106ABC

Due to unexpected circumstances, the previously announced EPD/MPMD luncheon lecturer will not be able to present at TMS2018. Information on the new luncheon speaker can be found on the TMS2018 App or the TMS2018 website.

*This lecture is open to all meeting attendees, but only those who purchased tickets in advance will receive a catered lunch. Luncheon tickets may be purchased at the Registration Desk until 10:00 a.m. on Monday, March 12.

HELP US DETERMINE NEXT YEAR’S AWARD LECTURERS

Nominations are now being accepted for a number of TMS society and division awards for 2019, including several TMS2019 award lecturers. Submit your nominees by April 1.

Visit www.tms.org/awards for more information.
Young Professional Tutorial Luncheon Lecture

Date: Tuesday, March 13
Luncheon: Noon to 12:45 p.m. (Tickets can be purchased at the Registration Desk until 10:00 a.m. on Monday, March 12)
Lectures: 12:45 p.m. to 2:00 p.m. (No tickets required)
Location: Phoenix Convention Center, 105BC

Speaker: Sung Woo Nam, University of Illinois
Lecture Title: “Designing and Shaping Nano-materials via Controlled Mechanical Deformations”

About the Topic: Mechanical deformations, such as buckling, crumpling, wrinkling, collapsing, and delamination, are usually considered threats to mechanical integrity which are to be avoided or minimized in the design of materials and structures. However, if materials systems and applied stresses are carefully controlled, such mechanical instabilities can deterministically create functional morphologies that can enable powerful new functions. In particular, in atomically-thin nano-material systems with ultralow bending stiffness, such as graphene, mechanical deformations enable new structural properties and device-level functionalities which surpass the limits of bulk material systems. In this presentation, the speaker will share a vision on how controlled mechanical deformations can be used to enable new functional morphologies in materials and what can be learned by fusing principles of design, mechanics, and materials.

Speaker: Cong Wang, Northeastern University, Shenyang, China
Lecture Title: “Oxide Metallurgy: From Concept to Practice”

About the Topic: The toughness-strength trade-off has long puzzled the materials community, particularly for the structural alloy R&D tribes. Strengthening is generally achieved through the controlled creation of internal defects and boundaries to obstruct dislocation motion. However, such strategies may lead to deteriorated toughness and conductivity as well as corrosion resistance. Recently, thanks to the salient progress in inclusion engineering in steels, Oxide Metallurgy, effectively utilizing inclusion/microstructure interactions in concurrent ways, has shown great promises in reshaping the paradox. In this talk, we offer an integrated view of inclusion evolution, during refining, continuous casting, rolling as well as heat-treating, and present new perspectives challenging the hypotheses governing behaviors of outstanding features, such as acicular ferrite formation as well as austenite growth inhibition. Finally, we will demonstrate how the novel concept morphs into practice via applications in shipbuilding steels.

WHAT DO OUR MEMBERS HAVE TO SAY ABOUT US?

Earlier this year, TMS asked its members a simple question: In one word, how would you describe us? While the number of different words we received covered a lot of territory, you can see the most frequent responses here.
Japan Institute of Metals and Materials
International Scholar

Date and Time: Tuesday, March 13, 3:55 p.m
Location: Phoenix Convention Center, Room 229B

Speaker: Atsushi Unemoto, Hitachi Ltd.
Lecture Title: “Advanced Study on Complex Hydrides for All-Solid-State Secondary Batteries”

About the Topic: Recently, complex hydrides, possessing fast ionic conductivity and electrochemical stability, are considered as a new electrolyte family for all-solid-state lithium rechargeable batteries, beyond the classical oxide and sulfide electrolytes. Unemoto’s research group first succeeded in the operation of an all-solid-state battery that uses a LiBH₄ complex hydride electrolyte together with a TiS₂ positive and Li negative electrodes in 2014. The study was then extended to enhance its energy density. A high-capacity sulfur positive electrode, exhibiting an order greater capacity than conventional oxide positive electrodes, was then incorporated into the all-solid-state battery. High discharge capacity of over 730 mAh g⁻¹ was successfully demonstrated for 45 cycles. Additionally, operation of high-temperature durable all-solid-state batteries was successfully demonstrated at 423 K, as a result of an industry-academia partnership project between Tohoku University and Hitachi, Ltd. In this presentation, R&D history related to complex hydride electrolytes and their battery application will be reviewed.

WEDNESDAY, MARCH 14

Light Metals Division Luncheon

Date and Time: Wednesday, March 14, Noon to 2:00 p.m.
Location: Phoenix Convention Center, Room 106ABC

Speaker: Martin Jarrett, Constellium UK Ltd
Lecture Title: “Accelerating the Development of Aluminum Lightweighting Solutions for Crash Management Systems and Structural Automotive Components”

About the Topic: In this talk, Jarrett will discuss how the importance of being innovative and close to their customers is a driving force within Constellium and for their automotive business. This strategy has broken new ground at Brunel University London with the establishment of the Constellium University Technology Center (UTC). This center, a first of its kind in the industry, aims to bridge the gap between fundamental research and series production. A key feature of the work of the UTC will be the rapid prototyping of extruded profiles and components to enhance strength and crush performance limits. A “copy and paste” approach to technology transfer and industrialization will then provide the opportunity to significantly compress development times to series production. The UTC will have a powerful armory of hardware to deliver on its promise of advanced technology and shorter times to market. The opening of the first phase took place in April 2016, with the commissioning of a full-size extrusion press and associated billet casting facilities. Phase 2 will be operational in Q1 2018 and will consist of novel forming and joining technologies in order to produce full-size component prototypes. This presentation will showcase the equipment and some of the key projects being developed, with a critical focus on the application of high-strength 6xxx alloys for the lightweighting of structural automotive parts.

*This lecture is open to all meeting attendees, but only those who purchased tickets in advance will receive a catered lunch. Luncheon tickets may be purchased at the Registration Desk until 10:00 a.m. on Tuesday, March 13.
## Networking & Social Events

### Sunday, March 11

**President’s Welcoming Reception**  
**Date:** Sunday, March 11  
**Time:** 6:00 p.m. to 7:00 p.m.  
**Location:** Phoenix Convention Center, Hall E  
Kick off the TMS 2018 Annual Meeting & Exhibition with this social networking event, a relaxed opportunity to meet with some of your global colleagues before presentations begin on Monday. Refreshments will be provided.

### Monday, March 12

**Lunch in the Exhibit Hall**  
**Date:** Monday, March 12  
**Time:** 1:00 p.m. to 2:30 p.m.  
**Location:** Phoenix Convention Center, Hall CD  
Enjoy lunch in the exhibit hall—included as part of your TMS2018 registration. After lunch, browse exhibitor displays before the afternoon technical sessions begin. Lunch tickets are attached to your name badge.

**Exhibit Opening Reception and Poster Session**  
**Date:** Monday, March 12  
**Time:** 6:00 p.m. to 7:30 p.m.  
**Location:** Phoenix Convention Center, Hall CD  
You are invited to meet in the exhibit hall for appetizers, beverages, and networking with exhibitors, poster presenters, and other colleagues on the first day of the TMS2018 Exhibition.

### Tuesday, March 13

**Lunch in the Exhibit Hall**  
**Date:** Tuesday, March 13  
**Time:** 11:30 a.m. to 1:30 p.m.  
**Location:** Phoenix Convention Center, Hall CD  
Enjoy lunch in the exhibit hall—included as part of your TMS2018 registration. After lunch, browse exhibitor displays before the afternoon technical sessions begin. Lunch tickets are attached to your name badge.

**Exhibit Hall Happy Hour and Poster Session**  
**Date:** Tuesday, March 13  
**Time:** 6:00 p.m. to 7:30 p.m.  
**Location:** Phoenix Convention Center, Hall CD  
All attendees are invited to gather in the exhibit hall for appetizers, beverages, and networking with exhibitors, poster presenters, and colleagues.

### Wednesday, March 14

**Fresh Coffee, Fresh Ideas: Diversity and Inclusion Breakfast**  
**Tickets required. Tickets must be purchased by Monday at 5:00 p.m. at the Registration Desk.**  
**Date:** Wednesday, March 14  
**Time:** 7:00 a.m. to 8:00 a.m.  
**Location:** Phoenix Convention Center, Room 106ABC  
Organized by the TMS Diversity Committee, this event offers an opportunity for TMS members to network and discuss issues related to diversity and inclusion in the minerals, metals, and materials professions. The main focus of the breakfast presentation this year will be on expanding awareness of identity, including exploring topics related to gender, sex, race, ethnicity, and sexual orientation.

**Lunch in the Exhibit Hall**  
**Date:** Wednesday, March 14  
**Time:** 11:30 a.m. to 1:30 p.m.  
**Location:** Phoenix Convention Center, Hall CD  
Enjoy lunch in the exhibit hall—included as part of your TMS2018 registration. After lunch, browse exhibitor displays before the afternoon technical sessions begin. Lunch tickets are attached to your name badge.

**2018 TMS-AIME Awards Ceremony & Banquet**  
**Tickets required. Tickets must be purchased by Tuesday at 10:00 a.m. at the Registration Desk.**  
**Date:** Wednesday, March 14  
**Reception Time:** 5:30 p.m. (Open to all TMS2018 attendees)  
**Awards Ceremony:** 6:00 p.m. (Open to all TMS2018 attendees)  
**Banquet:** 7:30 p.m.  
**Gala:** 8:30 p.m. to 10:00 p.m.  
**Location:** Sheraton Grand Phoenix, Valley of the Sun  
Show your support for colleagues who will be accepting awards from TMS and the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) at the 2018 TMS-AIME Awards Ceremony & Banquet.
**SUNDAY, MARCH 11**

**TMS2018 Materials Bowl**

Date: Sunday, March 11  
Elimination Rounds: Noon to 3:00 p.m.  
Championship Round: 5:00 p.m. to 5:45 p.m.  
Location: Phoenix Convention Center, Room 221ABC  
Even if you aren’t competing in the materials-themed quiz-show competition, you’re welcome to attend the elimination rounds or the final championship round. Play along to test your materials science and engineering knowledge or cheer on your favorite school.

**Student Mixer**  
Date: Sunday, March 11  
Time: 7:30 p.m. to 9:00 p.m.  
Location: Phoenix Convention Center, Hall AB Foyer  
Take a break and have some fun at this informal social event. Students will have the opportunity to interact with each other and with professionals in a relaxed setting. Refreshments will be provided.

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**MONDAY, MARCH 12**

**Technical Division Student Poster Contest Session**

Date: Monday, March 12  
Time: 6:00 p.m. to 7:30 p.m.  
Location: Phoenix Convention Center, Hall CD  
Stop by and browse the student poster displays at your leisure or attend the official poster session to ask questions of the participants. If you are participating in the student poster contest, you must be present at this judging session to answer questions about your work.

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**TUESDAY, MARCH 13**

**Student Career Forum**

Date: Tuesday, March 13  
Time: 2:00 p.m. to 4:00 p.m.  
Location: Phoenix Convention Center, Room 221A  
Organized by the TMS Young Professional Committee, this session will feature speakers from various stages of their careers and diverse materials science backgrounds to discuss how to navigate a successful career path in the fields of minerals, metals, and materials.

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**ARE YOU GRADUATING FROM THE MATERIAL ADVANTAGE PROGRAM IN 2018?**

Become a Recent Graduate Member of TMS for 2019—Free!

Fill out our recent graduate membership application form at the TMS Member Welcome Center and your first year of membership in TMS following graduation will be free. You’ll retain your Material Advantage membership through the end of 2018; your free year of membership will begin January 2019.

Visit the TMS Member Welcome Center, located on the 300 Level North of the Phoenix Convention Center to learn more.
SCHEDULE OF EVENTS

Date: Wednesday, March 14
Location: Sheraton Grand Phoenix, Valley of the Sun
Reception: 5:30 p.m.
(Acknowledged to all TMS2018 attendees)
Awards Ceremony: 6:00 p.m.
(Acknowledged to all TMS2018 attendees)
Banquet: 7:30 p.m. (Tickets required.)
Awards Ceremony Gala: 8:30 p.m.
(Ticket included when purchasing a banquet ticket)

The reception and ceremony are open to all meeting attendees, but tickets are required for the dinner and gala portion of the evening. Tickets must be purchased by Tuesday at 10:00 a.m. at the Registration Desk.

The 2018 TMS-AIME Awards Ceremony and Banquet will be an elegant event, designed to honor the significant professional achievements of members of the minerals, metals, and materials communities. The ceremony includes presentations of awards from both TMS and the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), of which TMS is a member society. Additional awards, including three Acta Materialia awards, will also be presented to TMS members.

The evening will consist of four parts. First, award recipients and their guests will be welcomed at a cocktail reception. Following the reception, participants will be seated for the awards ceremony, where individual recipients will be honored for their accomplishments. After the ceremony, those participants who have purchased banquet tickets will proceed to the adjacent ballroom for an elegant dinner. Attendees who purchased a banquet ticket will also receive a ticket to the Awards Ceremony Gala which immediately follows dinner. Gala attendees can network while enjoying after-dinner drinks and dessert.

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Installation of the 2018 TMS President:

Kevin Hemker

During the 2018 TMS-AIME Awards Banquet, TMS will install Kevin J. Hemker as the society’s 2018 president. Hemker is Alonzo G. Decker Chair and Professor of Mechanical Engineering at Johns Hopkins University. He also holds joint appointments in the Departments of Materials Science and Engineering and Earth & Planetary Sciences. A professional member of TMS since 1991, Hemker has served two terms on the TMS Board of Directors as Public & Governmental Affairs (P&GA) Director from 2008 to 2013. He has also contributed as a member of the Titanium, Strategic Planning, and P&GA committees. In 2014, he was elected a TMS Fellow. Hemker earned his B.S. in metallurgy from the University of Cincinnati, and his M.S. and Ph.D. in materials science and engineering from Stanford University.

Awards Ceremony Presenters
The ceremony will be hosted by James J. Robinson, TMS executive director, and will include comments from David DeYoung, 2017 TMS president, and Kevin Hemker, 2018 TMS president. In addition, the following presenters will announce the awards:

- John Speer, Colorado School of Mines and 2017 AIME President
- Michele Lawrie-Munro, AIME Executive Director
- Carolyn Hansson, University of Waterloo and Acta Materialia Executive Secretary
- George T. “Rusty” Gray III, Los Alamos National Laboratory and Acta Materialia Chair & Treasurer
- Christopher Schuh, Massachusetts Institute of Technology and TMS Fellow – Class of 2015
- Julie Christodoulou, U.S. Office of Naval Research and 2016 Distinguished Lectureship in Materials and Society Award
- Martin Glicksman, Florida Institute of Technology and TMS Fellow – Class of 1994
2018 AWARD RECIPIENTS

TMS FELLOWS – CLASS OF 2018
• Gerbrand Ceder
  Professor
  University of California
• Brent Fultz
  Professor
  California Institute of Technology
• Carol Handwerker
  Professor
  Purdue University
• Peter Liaw
  Professor
  University of Tennessee
• Daniel Miracle
  Senior Scientist
  Air Force Research Laboratory
• Ray Peterson
  Technology Director
  Real Alloy

BRIMACOMBE MEDALISTS – CLASS OF 2018
• Ibrahim Karaman
  Professor
  Texas A&M University
• Roger Narayan
  Professor
  University of North Carolina
• Katsuyo Thornton
  Associate Professor
  University of Michigan
• Xinghang Zhang
  Professor
  Purdue University

APPLICATION TO PRACTICE AWARD
• Chih Chen
  Distinguished Professor
  National Chiao Tung University

BRUCE CHALMERS AWARD
• Jyotirmoy Mazumder
  Professor
  University of Michigan

MORRIS COHEN AWARD
• Tresa Pollock
  Professor
  University of California

JULIA AND JOHANNES WEERTMAN EDUCATOR AWARD
• Garry Warren
  Professor Emeritus
  University of Alabama

WILLIAM HUME-ROTHERY AWARD
• Zhi-Kui Liu
  Professor
  Pennsylvania State University

INSTITUTE OF METALS LECTURER & ROBERT FRANKLIN MEHL AWARD
• Marc A. Meyers
  Distinguished Professor of Materials
  University of California

LEADERSHIP AWARD
• Naresh Thadthani
  Professor & Chair
  Georgia Institute of Technology

ALEXANDER SCOTT DISTINGUISHED SERVICE AWARD
• Tresa Pollock
  Professor
  University of California

OLEG D. SHERBY AWARD
• Terence Langdon
  Professor
  University of South Hampton

CYRIL STANLEY SMITH AWARD
• Raja Mishra
  Technical Fellow
  General Motors R&D Center

EARLY CAREER FACULTY FELLOW
• Cong Wang
  Junior Professor
  Northeastern University
• Sung Woo Nam
  Assistant Professor
  University of Illinois

AIME AWARDS

AIME HONORARY MEMBERSHIP
• Tresa Pollock
  Professor
  University of California
• Subhash Mahajan
  Distinguished Professor & Special Adviser to the Chancellor
  University of California

TMS/SME/AIME JAMES DOUGLAS GOLD MEDAL
• Michael Moats
  Associate Professor
  Missouri University of Science and Technology

AIME ROBERT LANSING HARDY AWARD
• Allison Beese
  Assistant Professor
  Pennsylvania State University

AIME CHAMPION H. MATTHEWSON AWARD
• Ekkes Bruck
  Professor
  Delft University of Technology
• Haixing Fang
  Student
  Delft University of Technology
• Maarten Emre Gramsma
  Jr. Consultant/Researcher
  Peutz B.V.
• Michael Herbig
  Researcher, Group Leader
  Max-Planck-Institute for Iron Research GmbH
• Margarita Kuzmina
  Head of Analytical Laboratory
  Schmidt • Clemens GmbH
• Cees Kwakernaak
  Senior Research Technician
  Delft University of Technology
• Dierk Raabe
  Professor, Director
  Max-Planck Institute
• Willem Soolf
  Associate Professor
  Delft University of Technology
• Frans Tichelaar
  Researcher
  Delft University of Technology
• Sybrand van der Zwaag
  Professor
  Delft University of Technology
• Niels van Dijk
  Associate Professor
  Delft University of Technology
• Shasha Zhang
  Associate Research Fellow
  Nanjing University of Aeronautics and Astronautics

Topic area - Solidification
• Wanlin Wang
  Professor
  Central South University
• Haihui Zhang
  Student
  Central South University

AIME Henry deWitt Smith Scholarships
• Samuel Rodrigues
  Student
  McGill University
• Kao Zoua Yang
  Student
  University of Wisconsin-Milwaukee

OTHER AWARDS

ACTA MATERIALIA GOLD MEDAL AWARD
• Subhash Mahajan
  Distinguished Professor & Special Adviser to the Chancellor
  University of California

ACTA MATERIALIA SILVER MEDAL AWARD
• Nikhilesh Chawla
  Professor
  Arizona State University

ACTA MATERIALIA MATERIALS AND SOCIETY AWARD
• Julie Christodoulou
  Director of Naval Materials Division
  U.S. Office of Naval Research

DIVISION AWARDS

EXTRACTION & PROCESSING DIVISION (EPD)

DISTINGUISHED SERVICE AWARD
• Peter Hayes
  Professor
  University of Queensland

SCIENCE AWARD
• Tamara Chapman
  Materials Technologist
  Rolls Royce Plc
• Vassili Vorontsov
  Research Fellow
  Imperial College London
• Ananthi Sankaran
  Powertrain Engineer
  Ford Motor Company Ltd.
• David Rugg
  Senior Engineering Fellow
  Rolls-Royce Plc
• Trevor Lindley
  Senior Research Investigator
  Imperial College, London
• David Dye
  Professor
  Imperial College, London

TECHNOLOGY AWARD
• Suming Zhu
  Senior Research Fellow
  RMIT University
• Mark Easton
  Associate Dean
  RMIT University
• Trevor Abbott
  Director of Research and Development
  Magontec Ltd
• Jian-Feng Nie
  Professor
  Monash University
• Matthew Dargusch
  Professor
  University of Queensland
• Norbert Hort
  Head of Magnesium Processing Group
  Helmholtz-Zentrum Geesthacht
• Mark Gibson
  Senior Principal Research Scientist
  CSIRO Manufacturing

NAGY EL-KADDAH AWARD FOR BEST PAPER IN MHD IN MATERIAL PROCESSING
• Huai Wang
  Shanghai University
• Yunbo Zhong
  Shanghai University
• Qiang Li
  Shanghai University
• Yipeng Fang
  Shanghai University
• Weili Ren
  Associate Professor
  Shanghai University
• Zuo-Sheng Lei
  Shanghai University
• Zhongming Ren
  Professor
  Shanghai University

2018 TMS-AIME AWARDS CEREMONY

www.tms.org/TMS2018
2018 AWARD RECIPIENTS

MATERIALS
CHARACTERIZATION AWARDS
Best Paper Award - First Place
- Mark H. Shooter
  Student
  Tufts University
- Michael A. Zimmerman
  Professor
  Tufts University
- Anil Saigal
  Professor
  Tufts University

Best Paper Award - Second Place
- Md Abdul Kader
  Student
  University of New South Wales
- Md Ashraful Islam
  Student
  University of New South Wales
- Andrew Brown
  Research Associate
  University of New South Wales
- Paul Hazell
  Professor
  University of New South Wales
- Mohammad Saadatfar
  Fellow
  Australian National University
- Juan Escobedo-Diaz
  Senior Lecturer
  University of New South Wales

Best Paper Award - Third Place
- Elizabeth Carvalho L. Cardoso
  Student
  Instituto de Pesquisas Energeticas e Nucleares-IPEN/CNEN-SP
- Shebayan Roy
  Professor
  Indian Institute of Technology Kharagpur
- Lawrence Allard Jr.
  Oak Ridge National Laboratory
- Amit Shyam
  Senior R&D Staff
  Oak Ridge National Laboratory
- Dongwon Shin
  Oak Ridge National Laboratory
- J. Allen Haynes
  Oak Ridge National Laboratory

JOM BEST PAPER AWARD
- Sang Hoon Lee
  Engineering Specialist
  Thermo Fisher Scientific
- Mostafa Maazouz
  R&D Manager
  Thermo Fisher Scientific
- Liang Zhang
  Senior Applications Engineer
  Thermo Fisher Scientific
- Mauricio Gordillo
  Thermo Fisher Scientific
- Micah Ledoux
  Applications Development Engineer
  Thermo Fisher Scientific
- Jeff Blackwood
  Thermo Fisher Scientific

JOHN BARDEEN AWARD
- Justin Schwartz
  Kobe Steel Distinguished Professor
  North Carolina State University

DISTINGUISHED SERVICE AWARD
- Roger Narayan
  Professor
  North Carolina State University

JEM BEST PAPER AWARD
- Tong An
  Beijing University of Technology
- Si Chen
  Beijing University of Technology
- Fei Qin
  Beijing University of Technology
- Pei Chen
  Beijing University of Technology

LIGHT METALS DIVISION (LMD)

DISTINGUISHED SERVICE AWARD
- John Grandfield
  Director
  Grandfield Technology Pty Ltd

TECHNOLOGY AWARD
- Olivier Martin
  Senior Technologist
  RioTinto

JOM BEST PAPER AWARD
- Alexei Vinogradov
  Professor
  Norwegian University of Science & Technology
- Kristian Måthís
  Associate Professor
  Charles University

LIGHT METALS AWARD
- David Weiss
  VP Engineering
  Ech Industries Inc.
- Orlando Rios
  Oak Ridge National Laboratory
- Zachary Sims
  Student
  University of Tennessee
- Scott McCall
  Lawrence Livermore National Laboratories
- Ryan Ott
  Scientist
  Ames Laboratory

LIGHT METALS SUBJECT AWARDS
- Alumina/Bauxite
  Yanxiu Wang
  Student
  Northeastern University
- Ting-an Zhang
  Northeastern University
- Guozhi Lu
  Associate Professor
  Northeastern University
- Weiguang Zhang
  Northeastern University
- Xiaofeng Zhu
  Northeastern University
- Liquan Xie
  Northeastern University
- Aluminum Reduction Technology
  Dawei Yu
  Pyrometallurgist
  CanmetMINING
- Vishnuvardhan Mambakkam
  Student
  University of Toronto
- Donghui Li
  Ceramic Engineer
  National Energy Technology Laboratory
- Jinichiro Nakano
  Professor
  University of Tokyo

MAGNESIUM TECHNOLOGY AWARDS

Application
- Christopher Gourlay
  Reader
  Imperial College London
- Guang Zeng
  Research Associate
  Imperial College London
- Jingwei Xian
  Research Associate
  Imperial College London

Fundamental Research
- Michael J. Nemcko
  Postdoctoral Fellow
  University of Waterloo
- Armin Abedini
  Student
  University of Waterloo
- Clifford Butcher
  Assistant Professor
  University of Waterloo
- Peidong Wu
  Professor
  McMaster University
- Michael J. Worswick
  Professor
  University of Waterloo

Student Paper
- Chaitanya Kale
  Student
  Arizona State University
• Mansa Rajagopalan  
  Product Engineer  
  LAM Research Corp

• Scott Turnage  
  Student  
  Arizona State University

• Billy Hornbuckle  
  US Army Research Laboratory

• Kristopher Darling  
  US Army Research Laboratory

• Suveen Mathaudhu  
  Assistant Professor  
  University of California

• Kiran Solanki  
  Assistant Professor  
  Arizona State University

• Michael Melia  
  Student  
  University of Virginia

• Michael Serron  
  Mechanical Engineer  
  InVue Security Products

• David Florian  
  Student  
  Vanderbilt University

• Jonathan Weiler  
  Core Technology Manager  
  Meridian Lightweight Technologies, Inc.

• John Scully  
  Professor  
  University of Virginia

• James Fitz-Gerald  
  Professor  
  University of Virginia

Best Poster

• Michael P. Brady  
  Distinguished R&D Staff  
  Oak Ridge National Laboratory

• Anton V. Levlev  
  Postdoctoral Research Associate  
  Oak Ridge National Laboratory

• Mostafa Fayek  
  Professor  
  University of Manitoba

• Donovan Leonard  
  Oak Ridge National Laboratory

• Harry M. Meyer III  
  Oak Ridge National Laboratory

• Matthew G. Frith  
  Postdoctoral Research Fellow  
  Oak Ridge National Laboratory

• Luke L. Daemen  
  Lead Instrument Scientist  
  Oak Ridge National Laboratory

• Anibal J. Ramirez-Cuesta  
  Oak Ridge National Laboratory

• Olga Ovchinnikova  
  Oak Ridge National Laboratory

• Lawrence M. Anovitz  
  Senior Research Scientist  
  Oak Ridge National Laboratory

• Gernot Rother  
  Neutron Scientist  
  Oak Ridge National Laboratory

• Dongwon Shin  
  Oak Ridge National Laboratory

• Guang-Ling Song  
  Professor  
  Xianmen University

• Bruce Davis  
  Magnesium Elektron North America

• Yongqiang Cheng  
  Oak Ridge National Laboratory

• Jeff Thomson  
  Oak Ridge National Laboratory

MATERIALS PROCESSING & MANUFACTURING DIVISION (MPMD)

DISTINGUISHED SERVICE AWARD

• Paul Mason  
  President  
  Thermo-Calc Software Inc.

DISTINGUISHED SCIENTIST/ENGINEER AWARD

• Irene Beyerlein  
  Professor  
  University of California

STRUCTURAL MATERIALS DIVISION (SMD)

DISTINGUISHED SCIENTIST/ENGINEER AWARD

• Stephen Foiles  
  Distinguished Member of Technical Staff  
  Sandia National Laboratories

DISTINGUISHED SERVICE AWARD

• Dennis Dimiduk  
  Chief Technologist  
  BlueQuartz Software LLC

JOM BEST PAPER AWARD

• Sudhanshu S. Singh  
  Assistant Professor  
  Indian Institute of Technology Kanpur

• Tyler J. Stannard  
  Student  
  Arizona State University

• Xianghui Xiao  
  Beamline Scientist  
  Argonne National Laboratory

• Nikhilesh Chawla  
  Professor  
  Arizona State University

YOUNG PROFESSIONAL AWARDS

EPD Young Leaders Professional Development

• Jacob McMurray  
  Research Associate  
  Oak Ridge National Laboratory

• Fiseha Tesfaye  
  Postdoctoral Researcher  
  Åbo Akademi University

FMD Young Leaders Professional Development

• Niaz Abdulrahim  
  Assistant Professor  
  University of Rochester

• Stephen McDonnell  
  Assistant Professor  
  University of Virginia

LMD Young Leaders Professional Development

• Victoria Miller  
  Assistant Professor  
  North Carolina State University

• Chuan Zhang  
  Principal Materials Scientist  
  USDA FS Forest Products Laboratory

• Eric Lass  
  Materials Research Engineer  
  NIST

SMD Young Leaders Professional Development

• Michael Titus  
  Assistant Professor  
  Purdue University

• Janelle Wharry  
  Assistant Professor  
  Purdue University

TMS/JIM Young Leaders International Scholar

• Atsushi Unemoto  
  Researcher  
  Hitachi Ltd

STUDENT AWARDS

EPD Scholarship

• Abigail McBride  
  South Dakota School of Mines and Technology

• Robert Seivert  
  South Dakota School of Mines and Technology

FMD Gilbert Chin Scholarship

• Nisrit Pandey  
  University of Wisconsin-Milwaukee

LMD Scholarship

• Nicholas Lipski  
  Colorado School of Mines

MPMD Scholarships

• Madeleine McAllister  
  Case Western Reserve University

• Justin Qian  
  University of Pennsylvania

SMD Scholarships

• Kayla Harvey  
  University of Nevada-Reno

TMS/JIM Young Leaders International Scholar

• Amber Genau  
  Associate Professor  
  University of Alabama

TMS Best Paper Contest Graduate Division

First Place:

• Rui Feng  
  University of Tennessee

Second Place:

• Shuying Chen  
  University of Tennessee

TMS Best Paper Contest Undergraduate Division

First Place:

• Vignesh Nallasivam  
  University of Tennessee
## 2017-2018 TMS BOARD OF DIRECTORS

### OFFICERS

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<tr>
<th>Position</th>
<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>2017 TMS President</td>
<td>David H. DeYoung</td>
<td>Director of R&amp;D, Breakthrough Technology, Alcoa</td>
</tr>
<tr>
<td>2017 Vice President/Incoming 2018 President</td>
<td>Kevin Hemker</td>
<td>Professor and Chair, Johns Hopkins University</td>
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<tr>
<td>Incoming 2018 Vice President</td>
<td>James C. Foley</td>
<td>Scientist, Los Alamos National Laboratory</td>
</tr>
<tr>
<td>Past President</td>
<td>Stanley M. Howard</td>
<td>Professor Emeritus, South Dakota School of Mines and Technology</td>
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<tr>
<td>Financial Planning Officer</td>
<td>Joy Forsmark</td>
<td>Technical Expert, Light Cast Metals, Ford Motor Company</td>
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<tr>
<td>Incoming Financial Planning Officer</td>
<td>Adrian C. Deneys</td>
<td>Business Development Manager, Praxair Inc.</td>
</tr>
<tr>
<td>Secretary (non-voting)</td>
<td>James J. Robinson</td>
<td>Executive Director, TMS</td>
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### FUNCTIONAL AREA DIRECTORS

<table>
<thead>
<tr>
<th>Area</th>
<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>Membership &amp; Student Development</td>
<td>Amy J. Clarke</td>
<td>Associate Professor, Colorado School of Mines</td>
</tr>
<tr>
<td>Programming</td>
<td>Srinivas Chada</td>
<td>Senior Principal Engineer, Stryker</td>
</tr>
<tr>
<td>Incoming Programming Director</td>
<td>Brad L. Boyce</td>
<td>Distinguished Member of the Technical Staff, Sandia National Laboratories</td>
</tr>
<tr>
<td>Professional Development</td>
<td>Chester J. Van Tyne</td>
<td>Professor Emeritus, Colorado School of Mines</td>
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<tr>
<td>Content Development &amp; Dissemination</td>
<td>Michele V. Manuel</td>
<td>Professor, University of Florida</td>
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<tr>
<td>Public &amp; Governmental Affairs</td>
<td>John A. Howarter</td>
<td>Assistant Professor, Purdue University</td>
</tr>
<tr>
<td>Extraction &amp; Processing Division</td>
<td>Cynthia K. Belt</td>
<td>Energy Management Consultant, Metals Energy Management LLC</td>
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<tr>
<td>Functional Materials Division</td>
<td>Raymundo Arróyave</td>
<td>Professor, Texas A&amp;M University</td>
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<tr>
<td>Light Metals Division</td>
<td>Alan A. Luo</td>
<td>Professor and Director, The Ohio State University</td>
</tr>
<tr>
<td>Materials Processing &amp; Manufacturing Division</td>
<td>Corbett C. Battaile</td>
<td>Principal Member, Technical Staff, Sandia National Laboratories</td>
</tr>
<tr>
<td>Structural Materials Division</td>
<td>Ellen K. Cerreta</td>
<td>Deputy Division Leader, Los Alamos National Laboratory</td>
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