

# TMS2008

**137th Annual Meeting & Exhibition**

**Linking Science and Technology  
for Global Solutions**

## Meeting Information

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## A Message From the TMS President

### **Welcome to the TMS 2008 Annual Meeting & Exhibition!**

Dear Colleague:

I am pleased to welcome you to what I believe to be the materials community's highlight event of the year ... the 137th Annual Meeting of The Minerals, Metals & Materials Society (TMS). Perhaps this is your first time in attendance. If so, I think you will find the meeting and exhibition to be a wonderful opportunity to learn about a wide range of technical advances, to meet and interact with colleagues from around the globe, and to see why many make TMS their "home" society as materials professionals. I encourage you to take full advantage of all the meeting has to offer, including:

- 56 symposia, 249 technical sessions and over 2,200 individual presentations
- Relevant and timely continuing education opportunities, including offerings of both scientific and industrial interest
- A wide-ranging exhibition, your gateway to global products and services housed on Innovation Boulevard and Technology Avenue
- Social and networking events, including the President's Welcoming Reception, technical program receptions, university alumni receptions, technical division lunches, and the TMS & AIME dinner and awards presentation
- Special all-conference lectures, including the Women in Science Breakfast Lecture, the Young Leaders Tutorial Luncheon Lecture, the Hume-Rothery and Robert Franklin Mehl lectures, and others
- The culture, cuisine and conviviality that is New Orleans!

For many of you, TMS Annual Meeting "veterans," we are supplementing the above meeting features on which you have come to rely with even more value. New for the 2008 meeting:

- Coordinated programming on "Materials and Society," recognizing the important role of our profession and materials in addressing the problems our world faces today
- Single collected proceedings CD-ROM containing all available proceedings content
- "Hands On New Orleans" service project held on Saturday, which allowed for interaction with the local community

I want to offer a special welcome to our student members, who represent a third of our Society and the future of our profession. We anticipate more than 700 undergraduate and graduate students are attending this week's meeting. I encourage each of you to use this opportunity to learn, network and advance your careers through the multiplicity of student-focused activities, starting on Sunday with the student attendee orientation, Career Forum, Career Tips Session, Materials Bowl, and Networking Mixer. The Technical Division Student Poster Contest on Monday evening provides another opportunity for interaction. Most importantly, don't hesitate to approach those of us who are, shall we say, more "senior" members of the field for advice, insight and mentorship. We are all happy to offer it.

So again, welcome, and I hope your week in the "Big Easy" is a big success!

Sincerely,

A handwritten signature in cursive script that reads "Robert D. Shull".

Robert D. Shull  
2007 TMS President

**This year's technical program offers you 56 symposia with more than 2,200 presentations providing knowledge important to your field.**

A few of the symposia are highlighted below that also include related technical or networking events. For a full listing of symposia, turn to the Technical Program which follows this Meeting Information section.

## **2008 Nanomaterials: Fabrication, Properties and Applications**

*Related Event:* poster session and networking reception, Sunday, 6 to 8 p.m., Room 274

## **9th Global Innovations Symposium: Trends in Integrated Computational Materials Engineering for Materials Processing and Manufacturing**

*Related Events:* networking reception, Monday, 5:50 to 7:30 p.m., Room 281; American Physical Society session, "Computational Materials Science," Monday, 8 a.m., R02, R03

## **Computational Thermodynamics and Kinetics**

*Related Event:* poster session and networking reception, Sunday, 6 to 8 p.m., Room 288

## **Hael Mughrabi Honorary Symposium: Plasticity, Failure and Fatigue in Structural Materials — from Macro to Nano**

*Related Events:* poster session and networking reception, Sunday, 6 to 8 p.m., Room 386; honorary dinner, Monday, 6 to 9:30 p.m., Hilton New Orleans Riverside, Marlborough A (Purchase dinner tickets at registration desk.)

## **Hume-Rothery Symposium: Nanoscale Phases**

*Related Event:* William Hume-Rothery award lecture, Monday, 2 p.m., Room 276

## **Light Metals-Related Symposia**

- Alumina and Bauxite
- Aluminum Reduction Technology
- Cast Shop Technology
- Electrode Technology 2008
- Hot and Cold Rolling Technology
- Recycling

*Related Events:* networking reception, Sunday, 6 to 8 p.m., Room 292; Light Metals Division luncheon lecture, Wednesday, noon to 2 p.m., Rooms 265-268 (Purchase luncheon tickets at the registration desk.)

## **Magnesium Technology 2008**

*Related Event:* networking reception, Sunday 6 to 8 p.m., Room 291

## **Materials and Society-Related Symposia**

- Sustainability, Climate Change and Greenhouse Gas Emissions Reduction
- Energy Conservation in Metals Extraction and Materials Processing
- IOMMMS Global Materials Forum 2008: Creating the Future MS&E Professional
- Materials for Infrastructure: Building Bridges in the Global Community
- Role of Engineers in Meeting 21st Century Societal Challenges
- Sloan Industry Centers Forum: Techno-Management Issues Related to Materials-Centric Industries

*Related Events:* Women in Science Breakfast Lecture, Monday, 7 to 8 a.m., Rooms 265-268; "Hands On New Orleans" community service project, Saturday—a group of TMS 2008 attendees volunteered to help in the restoration of a part of New Orleans. Read about it in the *TMS Today* newsletter. Pick up a free copy at stands located throughout the convention center.

## **Structural Aluminides for Elevated Temperature Applications**

*Related Event:* poster session and networking reception, Wednesday, 5:40 to 8 p.m., Room 394

## **Ultrafine-Grained Materials: Fifth International Symposium**

*Related Event:* poster session and networking reception, Tuesday, 6 to 8 p.m., Room 273

## Information to Help You Navigate TMS 2008

### Your registration includes these valuable learning and networking events:

Technical Sessions (*Monday through Thursday*)

ICME Technology Forum\* (*Sunday*)

Lead-Free Solders Technology Workshop\* (*Sunday*)

Women in Science Breakfast Lecture\* (*Monday*)

Young Leaders Tutorial Lecture\* (*Monday*)

Institute of Metals/Robert Franklin Mehl Lecture (*Monday*)

William Hume-Rothery Award Lecture (*Monday*)

Student Poster Contest (*Monday*)

Extraction & Processing Division Distinguished Lecture (*Tuesday*)

President's Welcoming Reception and Symposia-Related Receptions (*Sunday*)

Exhibition (*Monday through Wednesday*)

Hosted Grand Opening Reception in Exhibit Hall (*Monday*)

Snack Break in Exhibit Hall (*Wednesday*)

Collected Proceedings CD-ROM

*\*Preregistrants only*

*+Young Leaders lecture is free. Lunch requires preregistration.*

### Badges

Please be sure to wear your badge in order to be admitted to technical sessions, the exhibition and social functions. Guest badges are for spouses or companions of registered attendees and are for identification purposes only. Guests are not permitted in any technical sessions.

### Event Locations

Most conference events, including technical sessions, the exhibition, and the President's Welcoming Reception take place at the Ernest Morial Convention Center; the TMS & AIME Awards Presentation and student events are held at the Hilton New Orleans Riverside. For a specific event location, check the Schedule of Events on page 6.

### Shuttle Service

Two shuttle bus routes are operating in 30-minute intervals between the conference hotels and the Ernest Morial Convention Center. Please note: the Hampton Inn Convention Center, Hilton Garden Inn, and New Orleans Hotel are within walking distance of the Ernest Morial Convention Center.

Sunday	noon to 8:30 p.m.	Wednesday	6:30 a.m. to 7 p.m.
Monday	6:30 a.m. to 7:30 p.m.	Thursday	6:30 a.m. to 1:30 p.m.
Tuesday	6:30 a.m. to 7 p.m.		

Blue Route:	Country Inn & Suites Loews Marriott Convention Center Pelham Hotel Residence Inn by Marriott	Springhill Suites St. Christopher St. James W. New Orleans	Red Route:	Embassy Suites Hilton New Orleans Riverside Marriott Courtyard Wyndham Riverfront
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→ See the last pages of this program for floor plans.

## Internet Options

Visit the **TMS Cyber Center** in Hall J to check and send e-mail at no charge. **WiFi** is available for free in the concession area in front of Hall J and in the area near the top of the escalators on the 2nd floor. The convention center offers the option of WiFi throughout the convention center for an individual fee of \$3.95 an hour or \$16.95 a day; contact Mary Jones, exhibits services manager, at (504) 582-3036 or e-mail [maryj@mccno.com](mailto:maryj@mccno.com)

## Employment Referral Board

Post your resume or job openings on the employment referral board located at the TMS Member Welcome Area in Lobby J of the convention center.

## Guest Tours

Individuals interested in scheduled tours should see the representative from the tour company at the Tour/Housing desk in Lobby J of the convention center.

## Authors' Coffee

Attention speakers, session chairs and organizers!

Your attendance is required on the day of your session in order to coordinate last minute changes and to receive instructions before the presentations begin. Authors' coffee is held Monday through Thursday from 7:30 to 8:30 a.m. in Hall I-2 .

## Policies

### Refunds

The deadline for all refunds was February 11, 2008. No refunds are issued at the meeting. All fees and tickets are nonrefundable.



### 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 speak with a representative in the meeting registration area.

### Cell Phone Use

In consideration of attendees and presenters, TMS kindly requests your cooperation in minimizing disturbances which may occur during technical sessions due to cell phone use. Please place cell phones or other electronic devices in "silent mode" while you are in meeting rooms.

### Audio/Video Recording

TMS reserves the right to all audio and video reproductions of presentations at TMS sponsored meetings. 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.

### Photography Notice

By registering for the 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.

**Pick up your copy of the *Today* newsletter to keep up-to-date on what's happening at TMS 2008, available Sunday through Thursday at stands located throughout the convention center.**



**Location Key: C = Ernest Morial Convention Center / H = Hilton New Orleans Riverside**

Schedule accurate as of 2/5/08

<b>SUNDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Registration.....	11 a.m. to 8 p.m.	C / Hall J
TMS Knowledge Resource Sales.....	11 a.m. to 8 p.m.	C / Hall I-2 Lobby
TMS Member Welcome Area.....	11 a.m. to 8 p.m.	C / Hall J Lobby

**Continuing Education**

Lead-Free Solders Technology Workshop.....	8 a.m. to 5 p.m.	H / Grand Ballroom C
Grain Refinement of Aluminum Alloys Short Course.....	8 a.m. to 6 p.m.	H / Grand Salon C, Sect. 18
Greenhouse Gas Emissions Short Course.....	9 a.m. to 3:30 p.m.	H / Grand Salon C, Sect. 15
ICME Technology Forum.....	1 to 5 p.m.	H / Grand Salon B, Sect. 9
Nanomechanical Characterization Tutorial.....	1 to 5 p.m.	H / Grand Salon C, Sect. 16

**Student Events**

Materials Bowl.....	1 p.m.	H / Grand Ballrooms A & B
Championship Match.....	8:30 p.m.	
Student Attendee Orientation.....	2:30 to 3 p.m.	H / Grand Salon A, Sect. 3
Career Forum.....	3:30 to 4:30 p.m.	H / Grand Salon A, Sect. 3
Career Tips Session.....	4:30 to 6 p.m.	H / Grand Salon A, Sect. 3
Student Networking Mixer.....	9 to 11 p.m.	H / Grand Ballroom C

**Networking and Social Functions**

Young Leaders/New Member Reception.....	5 to 6 p.m.	H / Grand Salon A, Sect. 6
President's Welcoming Reception.....	6 to 8 p.m.	C / Hall I-2 Lobby
Computational Thermodynamics Reception/Poster Session.....	6 to 8 p.m.	C / Room 288
Hael Mughrabi Reception/Poster Session.....	6 to 8 p.m.	C / Room 386
Light Metals Reception.....	6 to 8 p.m.	C / Room 292
Magnesium Reception.....	6 to 8 p.m.	C / Room 291
Nanomaterials Reception/Poster Session.....	6 to 8 p.m.	C / Room 274

**Committee Meetings** (See page 9 for technical committee meetings.)

Professional Reg. Leadership Committee.....	7 to 9 a.m.	H / Prince of Wales
Financial Planning Committee.....	7:30 to 8:30 a.m.	H / Cambridge
Acta Materialia Inc. Board of Governors.....	8 a.m. to 7 p.m.	H / Grand Salon A, Sects. 4 & 7
Accreditation Committee.....	8:30 to 10:30 a.m.	H / Grand Salon B, Sect. 10
TMS Board of Directors Orientation.....	9 to 10:30 a.m.	H / Marlborough A & B
TMS Board of Directors Briefing and Luncheon.....	10:30 a.m. to 12:30 p.m.	H / Marlborough A & B
Young Leaders Committee Business Meeting.....	12:30 to 2 p.m.	H / Grand Salon A, Sect. 6
Public and Governmental Affairs Committee.....	1 to 2:30 p.m.	H / Marlborough B
Nominating Committee.....	2 to 3 p.m.	H / Marlborough A
ABET Training Session.....	2 to 4 p.m.	H / Grand Salon B, Sect. 10
ad hoc Materials and Society Committee.....	3 to 4:30 p.m.	H / Marlborough B
Program Committee.....	3 to 6 p.m.	C / Room 269
ad hoc International Advisory Committee.....	4:30 to 6 p.m.	H / Marlborough B
International Materials Review.....	7 to 9:30 p.m.	H / Grand Salon C, Sect. 15

<b>MONDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Registration.....	7 a.m. to 6 p.m.	C / Hall J
TMS Knowledge Resource Sales.....	7 a.m. to 6 p.m.	C / Hall I-2 Lobby
TMS Member Welcome Area.....	7 a.m. to 6 p.m.	C / Hall J Lobby
Authors' Coffee.....	7:30 to 8:30 a.m.	C / Hall I-2
Exhibition.....	noon to 6 p.m.	C / Hall J

<b>Furnace Systems and Technology Workshop</b> .....	1:15 to 5 p.m. ....	C / Room 289
<b>Exhibition Grand Opening Reception</b> .....	5 to 6 p.m. ....	C / Hall J
<b>Technical Division Student Poster Contest</b> .....	5 to 6:30 p.m. ....	C / Hall I-2

## Lectures

Women in Science Breakfast Lecture .....	7 to 8 a.m. ....	C / Rooms 265-268
Institute of Metals/Robert Franklin Mehl Lecture .....	12:30 to 1:30 p.m. ....	C / Room 271
Young Leaders Tutorial Luncheon Lecture .....	12:30 to 2 p.m. ....	H / Grand Salon A, Sect. 3
William Hume-Rothery Award Lecture .....	2 p.m. ....	C / Room 276

## Networking and Social Functions

Guest Hospitality .....	7 to 10 a.m. ....	H / Prince of Wales
Past Presidents' Brunch .....	8:30 to 10 a.m. ....	H / Cambridge
Sloan Industry Center Luncheon (invitation only) .....	noon to 2 p.m. ....	C / Room 268
TMS/APS ICME Networking Reception .....	5:50 to 7:30 p.m. ....	C / Room 281 Foyer
Purdue University Reception .....	6 to 7:30 p.m. ....	H / Grand Salon C, Sect. 18
Hael Mughrabi Honorary Dinner .....	6 to 9:30 p.m. ....	H / Marlborough A
Rio Tinto Alcan Reception .....	6 to 10 p.m. ....	C / Room 294
Colorado School of Mines Alumni Reception .....	6:30 to 7:30 p.m. ....	H / Grand Salon C, Sect. 15
Chinese Academy of Sciences Reception and Dinner .....	6:30 to 8:30 p.m. ....	H / Grand Ballroom B
International Partners Reception and Dinner (invitation only) .....	6:30 to 9 p.m. ....	H / Compass

## Committee Meetings (See page 9 for technical committee meetings.)

Metallurgical Transactions "A" Board of Review .....	7 to 8 a.m. ....	H / Marlborough B
LMD Council .....	7 to 8:30 a.m. ....	H / Grand Salon B, Sect. 9
MMT Joint Commission .....	8:30 to 10 a.m. ....	H / Marlborough B
TMS Executive Committee .....	10 to 11:30 a.m. ....	H / President's Suite
IOMMMS Council .....	noon to 1:30 p.m. ....	H / Marlborough A
EPD Council .....	noon to 2 p.m. ....	H / Grand Salon B, Sect. 9
EMPMD Council .....	12:30 to 2 p.m. ....	H / Grand Salon B, Sect. 10
Seven Springs Int. Sym. on Superalloys Program Committee .....	12:30 to 2 p.m. ....	H / Grand Salon C, Sect. 13
CSM/TMS Leadership .....	2 to 3 p.m. ....	H / President's Suite
REWAS 2008 Organizing Committee .....	2:30 to 4 p.m. ....	H / Grand Salon C, Sect. 16
ABM/TMS Leadership .....	3 to 4 p.m. ....	H / President's Suite
IIM/TMS Leadership .....	4 to 5 p.m. ....	H / President's Suite
PRICM-7 Organizing Committee .....	4 to 6 p.m. ....	H / Grand Salon A, Sect. 4
Seven Springs Int. Sym. on Superalloys Organizing Committee .....	5 to 7 p.m. ....	H / Grand Salon C, Sect. 13
Technical Division Chairs Strategy .....	6 to 8 p.m. ....	H / Grand Salon A, Sect. 6

## TUESDAY

	TIME	LOCATION / ROOM
<b>Registration</b> .....	7 a.m. to 5:30 p.m. ....	C / Hall J
<b>TMS Knowledge Resource Sales</b> .....	7 a.m. to 5:30 p.m. ....	C / Hall I-2 Lobby
<b>TMS Member Welcome Area</b> .....	7 a.m. to 5:30 p.m. ....	C / Hall J Lobby
<b>Authors' Coffee</b> .....	7:30 to 8:30 a.m. ....	C / Hall I-2
<b>Furnace Systems and Technology Workshop</b> .....	8:30 a.m. to 5 p.m. ....	C / Room 289
<b>Exhibition</b> .....	9:30 a.m. to 5:30 p.m. ....	C / Hall J

## Lectures

Extraction & Processing Division Luncheon .....	12:30 to 2 p.m. ....	C / Rooms 266-268
Extraction & Processing Division Distinguished Lecture .....	2 to 2:45 p.m. ....	C / Rooms 266-268

## TMS & AIME Awards Presentation

Reception .....	6 to 7 p.m. ....	H / Grand Ballrooms A & B Foyer
Dinner and Awards .....	7 to 10 p.m. ....	H / Grand Ballrooms A & B

**TUESDAY****TIME****LOCATION / ROOM****Networking and Social Functions**

Guest Hospitality .....	7 to 10 a.m.....	H / Prince of Wales
CSM Instruments Inc. Reception (invitation only) .....	noon to 1 p.m.....	H / Grand Salon C, Sect. 16
Ultrafine-Grained Materials Reception/Poster Session .....	6 to 8 p.m.....	C / Room 273

**Committee Meetings** (See page 9 for technical committee meetings.)

Metallurgical Transactions "B" Board of Review .....	7 to 8 a.m.....	H / Marlborough B
MPMD Council .....	7 to 9 a.m.....	H / Grand Salon B, Sect. 9
Fellows Award Committee .....	7:30 to 9 a.m.....	H / Grand Salon A, Sect. 6
Hume-Rothery/ACTA Met Awards Committee .....	7:30 to 9 a.m.....	H / Grand Salon A, Sect. 6
Honors and Professional Recognition Committee .....	9 to 10 a.m.....	H / Grand Salon A, Sect. 6
TRANSFAC'08 Organizing Committee .....	10 to 11:30 a.m.....	H / Prince of Wales
MRS/TMS Leadership Luncheon .....	noon to 2 p.m.....	H / President's Suite
SMD Council .....	noon to 2 p.m.....	H / Grand Salon B, Sect. 9
ASM/TMS Leadership .....	3 to 4 p.m.....	H / President's Suite
Women in Materials Science Committee .....	3 to 4:30 p.m.....	H / Grand Salon B, Sect. 7
PMP-III Organizing Committee .....	3 to 5 p.m.....	H / Grand Salon A, Sect. 4
MS&T Steering Committee .....	4 to 5:30 p.m.....	H / President's Suite
NMAB Town Hall on Corrosion Education .....	5:30 to 7 p.m.....	C / Room 388

**WEDNESDAY****TIME****LOCATION / ROOM**

Registration .....	7 a.m. to 5 p.m. ....	C / Hall J
TMS Knowledge Resource Sales .....	7 a.m. to 5 p.m. ....	C / Hall I-2 Lobby
TMS Member Welcome Area .....	7 a.m. to 5 p.m. ....	C / Hall J Lobby
Authors' Coffee .....	7:30 to 8:30 a.m.....	C / Hall I-2
Furnace Systems and Technology Workshop .....	8:30 a.m. to 1:45 p.m.....	C / Room 289
Exhibition .....	9:30 a.m. to 3 p.m. ....	C / Hall J
Light Metals Division Luncheon Lecture .....	noon to 2 p.m.....	C / Rooms 265-268
Exhibition Complimentary Snack .....	12:15 to 2 p.m.....	C / Hall J

**Networking and Social Functions**

Guest Hospitality .....	7 to 10 a.m.....	H / Prince of Wales
Structural Aluminides Reception/Poster Session .....	5:40 to 8 p.m.....	C / Room 394

**Committee Meetings**

TMS Board of Directors .....	7:30 a.m. to noon.....	H / Marlborough A & B
Education Committee .....	12:30 to 2 p.m.....	H / Cambridge
Nuclear Materials TAG .....	5 to 6 p.m.....	H / Cambridge

**THURSDAY****TIME****LOCATION / ROOM**

Registration .....	7 to 10 a.m.....	C / Hall J
TMS Knowledge Resource Sales .....	7 to 10 a.m.....	C / Hall I-2 Lobby
TMS Member Welcome Area .....	7 to 10 a.m.....	C / Hall J Lobby
Authors' Coffee .....	7:30 to 8:30 a.m.....	C / Hall I-2

**Committee Meetings**

Light Metals Subject Chair Breakfast .....	7 to 8:30 a.m.....	C / Room 294
ICME TAG .....	7:30 to 8:30 a.m.....	C / Room 269
Light Metals Executive Committee .....	8:30 to 10:30 a.m.....	C / Room 293



## TMS Technical Committee Meetings

*You are welcome to attend!*

Help chart the technological course for future TMS annual meetings, as well as the materials science and engineering profession, by joining a TMS technical committee. You are invited to attend any of the technical committee meetings below.

**Location Key: C = Ernest Morial Convention Center / H = Hilton New Orleans Riverside**

Schedule accurate as of 2/5/08

<b>SUNDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Recycling and Environmental Technologies Committee .....	noon to 1:30 p.m.....	H / Grand Salon B, Sect. 12
Pyrometallurgy Committee .....	1 to 2:30 p.m.....	C / Room 265
Magnesium Committee .....	1:30 to 3:15 p.m.....	C / Room 267
Thin Films and Interfaces Committee .....	3 to 4 p.m.....	C / Room 265
Aluminum Committee .....	3 to 4:30 p.m.....	C / Room 268
Reactive Metals Committee.....	3:30 to 4:30 p.m.....	C / Room 270
Global Innovations Committee.....	5 to 5:45 p.m.....	C / Room 267
Aqueous Processing Committee .....	5 to 6:30 p.m.....	C / Room 265
Nanomechanical Materials Behavior Committee.....	5:15 to 6:30 p.m.....	H / Grand Salon C, Sect. 16
TMS/ASM Mechanical Behavior Committee .....	7 to 8:30 p.m.....	C / Room 269
Materials Characterization Committee .....	7 to 9 p.m.....	C / Room 265
Alloy Phases Committee .....	7:30 to 9 p.m.....	H / Grand Salon B, Sect. 9
Phase Transformations Committee.....	7:30 to 9:30 p.m.....	C / Room 270
<b>MONDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Chemistry and Physics of Materials Committee .....	7:30 to 8:30 a.m.....	H / Grand Salon A, Sect. 4
Process Technology and Modeling Committee.....	8 to 8:50 a.m.....	H / Grand Salon B, Sect. 7
Superconducting and Magnetic Materials Committee .....	8 to 9 a.m.....	H / Grand Salon B, Sect. 10
Advanced Characterization, Testing and Simulation Com .....	5:30 to 6:30 p.m.....	H / Grand Salon B, Sect. 9
ASM/TMS Textures and Microstructures Committee .....	5:30 to 6:30 p.m.....	C / Room 269
Surface Engineering Committee.....	5:30 to 6:30 p.m.....	H / Marlborough B
Nuclear Materials Committee .....	5:30 to 7 p.m.....	H / Grand Salon B, Sect. 7
Composite Materials Committee .....	5:45 to 7:15 p.m.....	H / Prince of Wales
Biomaterials Committee .....	6 to 7 p.m.....	H / Grand Salon B, Sect. 10
Solidification Committee .....	6 to 7 p.m.....	H / Grand Salon B, Sect. 12
Computational Materials Science and Engineering Com. ....	8 to 9 p.m.....	H / Marlborough B
<b>TUESDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Electronic Packaging and Interconnection Materials Com.....	7 to 8 a.m.....	H / Marlborough A
Nanomaterials Committee .....	7:30 to 8:30 a.m.....	H / Cambridge
Powder Materials Committee.....	12:30 to 2 p.m.....	H / Cambridge
LMD/EPD New Energy Committee.....	5 to 6 p.m.....	C / Room 294
Refractory Metals Committee.....	5:30 to 6:30 p.m.....	H / Prince of Wales
Titanium Committee .....	6 to 7 p.m.....	H / Marlborough A & B
Shaping and Forming Committee.....	6 to 8 p.m.....	C / Room 269
Corrosion and Environmental Effects Committee.....	6:30 to 7:30 p.m.....	H / Cambridge
High Temperature Alloys Committee .....	6:30 to 8 p.m.....	C / Room 265
<b>WEDNESDAY</b>	<b>TIME</b>	<b>LOCATION / ROOM</b>
Aluminum Processing Committee .....	6:30 to 8 p.m.....	H / Prince of Wales

## Women in Science Breakfast Lecture

"Design for the Other 90%"

Monday • 7 to 8 a.m. • Convention Center, Rooms 265-268

**Speaker:** **Cynthia E. Smith**, Curator, *Design for the Other 90%* Exhibit, Smithsonian's Cooper-Hewitt, National Design Museum

### About the Topic

*Design for the Other 90%* explores a growing movement among designers to develop solutions for the 5.8 billion people across the globe (90 percent of the world's total population) not traditionally served by the professional design community. Through local and global partnerships, individual designers and organizations are finding unique ways to address the lack of basic necessities faced by the poor and marginalized around the world. Each of the objects in the exhibit tells a story and is a window into this expanding field of design, demonstrating how design can be a dynamic force in transforming and, in many cases, saving lives.

### About the Speaker

Cynthia Smith most recently completed her master's degree in public administration at the Kennedy School of Government, Harvard University, integrating her work experience with her advocacy and activism on the issues of human rights and social justice. While at Harvard, she co-authored "The Politics of Genocide: US Rhetoric vs. Inaction in Darfur" for the Kennedy School Review and joined a Graduate School of Design team to plan a new national park in response to the expanding sprawl north of Dallas. Trained as an industrial designer, for the past decade she planned and designed projects for cultural institutions, resulting in numerous award winning projects. A common thread in all her work is collaborating to bring a collective idea into an innovative form.

*Preregistrants only*

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## Young Leaders Tutorial Luncheon Lecture

"Computational Materials Science & Engineering: What is it and how do we Take Advantage?"

Monday • 12:30 to 2 p.m. • Hilton New Orleans Riverside, Grand Salon A, Sect. 3

**Speaker:** **Katsuyo Thornton**, Assistant Professor, Materials Science and Engineering, University of Michigan  
*Recipient of the TMS Early Career Faculty Fellow Award*

While it is a relatively new development in materials science and engineering (MSE), the use of computational tools has been prevalent in other engineering fields in the last decade, both in academic and industrial settings. Today, the abundance of computational tools, both for simulation and analysis of experimental results, are in place to be exploited. This lecture will address why experimentalists and theorists should become familiar with and utilize many of the standard materials science and engineering computational tools. An overview of the available methodologies, their applications and case studies will be presented.

*Open to all (lunch for preorders only)*

## Institute of Metals/Robert Franklin Mehl Lecture

“High Performance Structural Metals: an Undervalued but Critical Enabling Technology”

Monday • 12:30 to 1:30 p.m. • Convention Center, Room 271

*Speaker:* **James C. Williams**, Department of Materials Science and Engineering, The Ohio State University

### About the Topic

For years, better products have been enabled by improved materials of construction. For the most part, these materials have been metallic, although engineering plastics and some ceramics also have been contributors. At the beginning of the 21st century, the Tau Beta Pi list of the 10 most important engineering achievements of the 20th century contained seven items that could not have been accomplished without advances in materials technology. Today, continuing advances in metallic structural materials are still critical to the creation and production of competitive products. However, federal funding for this effort has dwindled in favor of other trendy topics, leaving a significant list of “unfinished business.” This talk will describe some of the past advances in structural materials and outline some important opportunities going forward. As appropriate, the reality (or lack thereof) of some of the trendy topics also will be assessed and some relative value comparisons will be offered.

*Open to all*

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## William Hume-Rothery Award Lecture

“Nanoscale Metal Silicides”

Monday • 2 p.m. • Convention Center, Room 276

*Speaker:* **L.J. Chen**, Department of Materials Science and Engineering, National Tsing Hua University

### About the Topic

As the integrated circuits industry (IC) moves into the nano era, scaling down the metal silicide contacts and gates has become an important issue. Many efforts with the bottom-up approach have been made to fabricate nanoscale silicides without elaborate microlithography. As opposed to zero-dimensional nanocrystals, metallic nanowires (NWs) can act both as interconnects for the transport of charge carriers as well as active device elements. In this talk, a historical account of evolving roles of metal silicides in the context of IC device applications will be presented. Epitaxial growth of metal silicides on silicon and formation of amorphous interlayers in the metal/Si systems will be reviewed. Synthesis and applications of metal silicide nanowires will be described, and the future outlook will be addressed.

*Open to all*

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## Extraction & Processing Division Luncheon Lecture

“Computational Modeling of Metals Processing: Past, Present and Future”

Tuesday • 12:30 to 2 p.m. • Convention Center, Rooms 266-268

*Speaker:* **Brian G. Thomas**, Wilkins Professor, Mechanical Engineering, University of Illinois; Director, Continuous Casting Consortium

### About the Topic

Computational models have grown tremendously in sophistication and power over the past three decades. This talk will first

recall the early days of process modeling and the pioneers of this important engineering tool. The advance of models since then has paralleled huge leaps in computer power. Recent examples of process models will be shown, including fluid flow, heat transfer and stress analysis of processes such as continuous casting of steel. Models are used for many purposes, including online control, education, offline simulation of complex phenomena to understand defects, design of processes, gaining new insights into behavior and more. Finally, the future of computational modeling will be contemplated.

### About the Speaker

Dr. Thomas' research focuses on the development and application of computational models of the continuous casting of steel and related processes. He has coauthored more than 200 technical publications on his research, which has been recognized with a Presidential Young Investigator Award from the National Science Foundation; Outstanding Young Manufacturing Engineer Award from the Society for Mining, Metallurgy & Exploration; a Xerox Award for the University of Illinois faculty research; and best paper awards from seven other organizations, including TMS. Dr. Thomas has co-instructed several short courses to transfer technology to industry, including the annual Brimacombe Continuous Casting Course.

*Purchase luncheon tickets for \$45 each at TMS registration.*

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## Extraction & Processing Division Distinguished Lecture

"Smelting and Refining – Faster, Smoother, Cheaper, Safer"

Tuesday • 2 to 2:45 p.m. • Convention Center, Rooms 266-268

*Speaker:* **David G.C. Robertson**, Professor, Metallurgical Engineering, Missouri University of Science and Technology

### About the Topic

The purpose of research and development in pyrometallurgy is to achieve at least one of the goals mentioned above (faster, smoother, cheaper, safer). This is accomplished in a number of ways – through better kinetics, improved control, continuous processing, more efficient use of fuels, secure containment of molten phases, and lower emissions to the environment, to mention a few. This lecture will review how basic research at the university can contribute to meeting these important goals, using examples mainly from work carried out by the author and his colleagues.

*Open to all*

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## Light Metals Division Luncheon Lecture

"Innovations in Steel Production – Animations for Aluminium Technologies?"

Wednesday • noon to 2 p.m. • Convention Center, Rooms 265-268

*Speaker:* **Reiner Kopp**, Professor Emeritus, Institute of Metal Forming, RWTH Aachen University

### About the Topic

Steel and aluminium strips are basic products for various innovative components in cars, aircraft and others. This lecture outlines some highlights of manufacturing new steel products and asks the question as to whether or not these innovations in steel could be animations for the development of aluminium products.

## About the Speaker

Prior to becoming professor emeritus at RWTH Aachen University, Reiner Kopp was vice president of the university and dean of the faculty of Geo-Sciences and Material Technology. He joined RWTH after an industrial career as head of production technology research and development at Dornier GmbH. Professor Kopp holds chairmanships and advisory board memberships with ThyssenKrupp Stainless, SMS Group and Vallourec & Mannesmann. He is also on the board of the German Academy of Technical Sciences, acatech, and is vice chair of the international organisation Euro-CASE. Professor Kopp is a member of the Academy of Science North Rhine-Westphalia and the Academy Cirp (College International pour la Recherche en Productique). He has received numerous honors and awards, including several honorary doctorates.

*Purchase luncheon tickets for \$45 each at TMS registration.*

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## Furnace Systems and Technology Workshop

Monday-Wednesday • Convention Center, Room 289

**Presenting Companies:** Air Liquide, Altek-MDY LLC, Bloom Engineering Co. Ltd., Dantherm Filtrations, Gillespie and Powers, Harbison Walker Refractories Co., Hauck Manufacturing Co. Inc., Maerz-Gautschi, Mechatherm International Ltd., Penta Engineering, Pyrotek/Emp Inc., Seco/Warwick Corp., The Schaefer Group, Thermcon/Otto Junker, Thorpe Technologies Inc.

### Monday • Basic Combustion

1:15 to 2 p.m.	Basics of Combustion
2:15 to 3 p.m.	Burner Technology and Design
3:15 to 4 p.m.	Mechanisms for Heat Transfer in Aluminum Melting and Process Furnace
4:15 to 5 p.m.	NOx and CO Emissions

### Tuesday • Cast Shop Equipment and Process Furnaces

8:30 to 9:15 a.m.	High Capacity Direct Charged Melters
9:30 to 10:15 a.m.	Well Charged Melters (Side Well)
10:30 to 11:15 a.m.	Multiple Chamber Furnaces for Processing Contaminated Scrap
11:30 a.m. to 12:15 p.m.	Caster – Vertical, Horizontal and Ingot
1:15 to 2 p.m.	Cleaning and Fluxing Furnace
2:15 to 3 p.m.	Dross Processing and Reducing Dross
3:15 to 4 p.m.	Coil Annealers
4:15 to 5 p.m.	Homogenizing Furnaces

### Wednesday • Productivity and Efficiency

8:30 to 9:15 a.m.	Refractory Selections for Aluminum Cast Houses
9:30 to 10:15 a.m.	Oxy Fuel Opportunities in the Aluminum Industry
10:30 to 10:45 a.m.	Metal Circulation
11 to 11:45 a.m.	Dioxin and Furan Issues
noon to 12:45 p.m.	Contract/Project Engineering
1 to 1:45 p.m.	Rotary Delac/Delacquering Systems

*Register for this workshop at TMS registration. Cost: \$200 members; \$250 nonmembers*



## General Poster Session and President's Welcoming Reception\*

Sunday • 6 to 8 p.m. • Hall I-2 Lobby

## Symposia-Related Poster Sessions and Networking Receptions\*

Sunday • 6 to 8 p.m.

■ 2008 Nanomaterials: Fabrication, Properties and Applications	Room 274
■ Computational Thermodynamics and Kinetics	Room 288
■ Hael Mughrabi Honorary Symposium	Room 386
■ Light Metals (networking reception only)	Room 292
■ Magnesium Technology 2008	Room 291

Monday • 5:50 to 7:30 p.m.

9th Global Innovations Symposium (networking reception only)	Room 281
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Tuesday • 6 to 8 p.m.

Ultrafine-Grained Materials: Fifth International Symposium	Room 273
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Wednesday • 5:40 to 8 p.m.

Structural Aluminides for Elevated Temperature Applications	Room 394
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*\*Use your two free drink tickets received at registration at any of the receptions on Sunday evening.*

## Hael Mughrabi Honorary Dinner

Monday, 6 to 9:30 p.m. • Hilton New Orleans Riverside, Marlborough A

Held in conjunction with the Hael Mughrabi Honorary Symposium

*Purchase tickets for \$70 each at TMS registration.*



## About the 2008 TMS President

Diran Apelian is Howmet Professor of Engineering and director of the Metal Processing Institute (MPI) at Worcester Polytechnic Institute, where he has worked for more than 15 years. Professor Apelian's research interests and expertise are in materials processing, and specifically, solidification and net-shape manufacturing. He is credited for pioneering work in various areas of solidification processing: molten metal processing and filtration of metals; aluminum foundry engineering; plasma deposition; and spray casting/forming. Professor Apelian has more than 400 publications to his credit and four books, which he has co-edited. He has served on, and chaired, several national materials advisory boards for the National Research Council. Professor Apelian has been an active member of TMS for more than 30 years.

## 137th TMS and AIME Awards Presentation

With Installation of 2008 TMS President

Tuesday • 6 p.m. Reception (Cash Bar) • 7 p.m. Dinner  
Hilton New Orleans Riverside, Grand Ballrooms A, B

Purchase tickets for \$70 each at TMS registration.



Robert D. Shull  
2007 TMS President



Diran Apelian  
2008 TMS President



Dan Thoma  
2007 AIME President

## Society Awards

### TMS Fellow Class of 2008

- Tsu-Wei Chou, *University of Delaware*
- Campbell Laird, *University of Pennsylvania*
- David E. Laughlin, *Carnegie Mellon University*
- S. Lee Semiatin, *U.S. Air Force Research Laboratory*

### Alexander R. Scott Distinguished Service Award

J. Wayne Jones, *University of Michigan*

### Application to Practice Award

Gregory J. Yurek, *American Superconductor*

### Bruce Chalmers Award

Alain Karma, *Northeastern University*

### Champion H. Mathewson Award

Adam Badri, *Royal Dutch Shell*

### Early Career Faculty Fellow

Katsuyo Thornton, *University of Michigan*

### Educator Award

Robert L. Snyder, *Georgia Institute of Technology*

### Institute of Metals Lecturer/Robert Franklin Mehl Award

James C. Williams, *The Ohio State University*

### John Bardeen Award

Pallab Bhattacharya, *University of Michigan*

### Leadership Award

Bruce A. MacDonald, *National Science Foundation*

### Robert Lansing Hardy Award

Ken Gall, *Georgia Institute of Technology*

### TMS Foundation Shri Ram Arora Award

Sasanka Deka, *National Chemical Laboratory*

### William Hume-Rothery Award

Lih J. Chen, *National Tsing Hua University*

## Division Awards

### Electronic, Magnetic & Photonic Materials Division

#### Distinguished Scientist/Engineer Award

Iver E. Anderson, *Iowa State University*

#### Distinguished Service Award

Sung-Kwon Kang, *IBM*

### Extraction & Processing Division

#### Distinguished Lecturer

David G.C. Robertson, *Missouri University of Science and Technology*

### Awards Continued

#### Distinguished Service Award

V. Ramachandran, *RAM Consultants*

#### Science Award

- Otavio Fortini, *Alcoa*
- Richard Fruehan, *Carnegie Mellon University*

#### Technology Award

- Alex Moyano Magna, *Codelco-Chile*
- Carlos Caballero Deramond, *Codelco-Chile*
- Roberto Mac-Kay Safian, *Codelco-Chile*
- Pedro Morales, *Codelco-Chile*
- Domingo Cordero Cantarero, *Codelco-IM2*
- Jonkion Font Carmona, *Codelco-IM2*

#### Light Metals Division

#### Distinguished Service Award

Barry Welch, *Welbank Consulting*

#### JOM Best Paper Award

James W. Evans, *University of California, Berkeley*

#### Light Metals Award

- Sebastien Leboeuf, *Alcan Inc.*
- Claude Dupuis, *Alcan Inc.*
- Bruno Maltais, *STAS*
- Marc-Andre Thibault, *STAS*
- Einar Smarason, *Alcan Iceland Ltd.*

#### Technology Award

Alton Tabereaux, *Technical Consultant*

#### Materials Processing & Manufacturing Division

#### Distinguished Scientist/Engineer Award

Brian G. Thomas, *University of Illinois*

#### Structural Materials Division

#### Distinguished Scientist/Engineer Award

S. Lee Semiatin, *U.S. Air Force Research Laboratory*

#### Distinguished Service Award

Marc Meyers, *University of California, San Diego*

#### JOM Best Paper Award

- James D. Holbery, *Pacific Northwest National Laboratory*
- Daniel Q. Houston, *Ford Motor Company*

#### Other Awards

#### 2008 Acta Materialia Inc. Gold Medal Award

Karl A. Gschneidner Jr., *Iowa State University and Ames Laboratory, U.S. Department of Energy*

#### AIME Distinguished Service Award

Alex R. Scott, retired, *The Minerals, Metals & Materials Society*

#### AIME Honorary Member

Robert H. Wagoner, *The Ohio State University*



## Sunday

All student events on Sunday take place at the Hilton New Orleans Riverside.



### 2nd Annual Materials Bowl

#### Grand Ballrooms A, B

Preliminary Elimination Rounds • 1 p.m.

Championship Match • 8:30 to 9 p.m.

A total of \$3,500 in prize money is awarded in this “Jeopardy”-style knowledge and trivia competition as well as the Materials Bowl Trophy! Currently, the trophy resides with the 2007 champions, Florida International University. Teams compete in preliminary elimination rounds, with the winners moving on to semifinal matches. The championship match culminates at the Student Networking Mixer. Come watch this exciting match!



### Orientation • 2:30 to 3 pm.

#### Grand Salon A, Sect. 3

Find out all you need to know about student activities at TMS 2008 and meet other students with similar interests.

### Career Forum • 3:30 to 4:30 p.m.

#### Grand Salon A, Sect. 3

Representatives from key materials industries provide personal insights on career preparation strategies, offer tips on how to develop and foster rewarding careers, and answer your questions.

### Career Tips Session • 4:30 to 6 p.m.

#### Grand Salon A, Sect. 3

Discover what human resource representatives are looking for when reviewing resumes and interviewing candidates.



### Student Networking Mixer • 9 to 11 p.m.

#### Grand Ballroom C

This networking mixer provides a relaxed, casual and fun atmosphere for students, faculty members, and government and industry representatives to make connections and share experiences of professional growth.

## Monday

### TMS Technical Division Student Poster Contest • 5 to 6:30 p.m.

#### Convention Center, Hall I-2

Both undergraduate and graduate students participate in this dynamic and interactive event. Each of the TMS technical divisions is awarding \$500 to the best undergraduate poster and \$500 to the best graduate poster. A top prize of \$2,500 is awarded by TMS for the “Best of Show” poster. Visit the student posters and discuss them with their authors!



**Order these new TMS 2008 Annual Meeting books at the TMS Knowledge Resource Sales area.**

- Aluminum Alloys: Fabrication, Characterization and Applications
- Carbon Dioxide Reduction Metallurgy
- EPD Congress 2008
- Light Metals 2008 (book and CD-ROM set)
- Magnesium Technology 2008 (book and CD-ROM set)
- Plasticity, Failure and Fatigue in Structural Materials-from Macro to Nano: Proceedings of the Hael Mughrabi Honorary Symposium
- Supplemental Proceedings Vol. 1: Materials Processing and Properties
- Supplemental Proceedings Vol. 2: Materials Characterization, Computation and Modeling
- Supplemental Proceedings Vol. 3: General Paper Selections

**Or order online in the new TMS Knowledge Resource Center at <http://knowledge.tms.org>. TMS members receive a 30% discount off the list price!**

*See the ad on page 18 in JOM in this program for more information about these books.*

### **Collected Proceedings CD-ROM**

To provide added value for attendees, this year a single CD-ROM containing select proceedings is provided free of charge to those who registered in one of the following categories: member, nonmember author, nonmember, TMS senior member, and exhibitor full conference. The CD-ROM includes:

- Multiple symposia proceedings
- Keynote presentations
- Links to additional resource information
- Table of contents

Each symposium is presented as an individual publication on the CD-ROM, with its own table of contents and copyright information.

The CD-ROM is also available for purchase but only on-site at TMS Knowledge Resource Sales. Cost is \$150; student price is \$75. The Collected Proceedings CD-ROM will not be available for purchase after March 13, 2008.

### **Printed Proceedings**

For those interested in purchasing printed copies of individual symposia, arrangements can be made during and after the conference. Visit TMS Knowledge Resource Sales or contact:

*TMS Customer Service • (724) 776-9000, ext. 256, or (800) 759-4TMS • E-mail [jsmith@tms.org](mailto:jsmith@tms.org)*

Books for all your technical needs are also available for purchase at the  
**TMS Knowledge Resource Sales area.**



# People Supporting TMS 2008



**Visit Science Avenue, Technology Avenue or Innovation Boulevard at the TMS 2008 Exhibition — 150 companies are showcasing the newest products and services you need to advance your work!**

**Find practical solutions to production, processing and research challenges in the exhibition hall during these hours:**

## **Monday**

noon to 6 p.m. • Hosted Grand Opening Reception at 5 p.m.

## **Tuesday**

9:30 a.m. to 5:30 p.m.

## **Wednesday**

9:30 a.m. to 3 p.m. • Snack Break 12:15 to 2 p.m.

See the Exhibition Directory preceding this Meeting Information section for full details.

## **TMS thanks our corporate sponsors for their generosity!**

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Vabco.....	Coffee Break: Monday Afternoon

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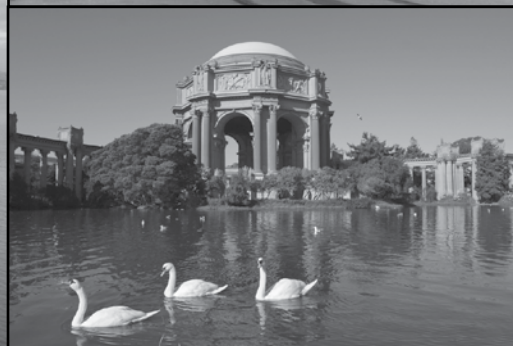
**Plan to join us in sunny California!**

# **TMS2009**

**138th Annual Meeting & Exhibition**

**February 15-19, 2009**

**Moscone West Convention Center  
San Francisco, California, USA**



**Details to come at [www.tms.org/annualmeeting.html](http://www.tms.org/annualmeeting.html)**



# TMS

## **Who We Are**

The Minerals, Metals & Materials Society is the professional organization encompassing the entire range of materials science and engineering, from minerals processing and primary metals production to basic research and the advanced applications of materials. The Society's broad technical focus covers light metals; electronic, magnetic and photonic materials; extraction and processing; materials processing and manufacturing; and structural materials.

## **Our Members**

Included among TMS professional members are metallurgical and materials engineers, scientists, researchers, educators and administrators who work in industry, government and academia, as well as students. They hail from more than 70 countries on six continents.

## **Our Mission**

The mission of TMS is to promote the global science and engineering professions concerned with minerals, metals and materials. The Society works to accomplish its mission by providing technical learning and networking opportunities through interdisciplinary and specialty meetings; continuing education; publications, including four journals and proceedings; and its Web site.

To learn more, visit **[www.tms.org](http://www.tms.org)** or **[www.materialstechnology.org](http://www.materialstechnology.org)**.

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