

## News & Update

### *Items of Note from the Field, Profession, and Society*

#### **TMS Convenes Summit on Materials and Manufacturing Innovation**

Nearly 50 invited senior-level thought leaders representing the spectrum of materials science, engineering, and manufacturing convened in Orlando on March 14 and 15 for the 2012 TMS Materials/Manufacturing Leaders Summit.

The topic of the Summit was “The Materials Innovation Process: Transformational Opportunities and Guiding Principles,” developed in response to the June 2011 announcement of the Advanced Manufacturing Partnership—and specifically the Materials Genome Initiative (MGI)—by President Barack Obama. The White House Office of Science and Technology Policy (OSTP) had encouraged TMS to use the Summit as a means of bringing together the materials and manufacturing communities to identify strategies for creating the innovation infrastructure necessary to support this transformative approach to materials discovery, development, and deployment. To ensure solid representation of industry leaders, TMS organized the Summit in cooperation with the U.S. Council on Competitiveness.

“Industry leadership in this effort is essential,” said Warren Hunt, TMS executive director. “The innovation tools emerging from the MGI and related initiatives will only deliver the economic benefits that they promise if industry effectively uses those tools.”

This perspective was echoed by Jack McDougle, senior vice president, Council on Competitiveness, in his remarks during the March 14 dinner that kicked off the Summit. “The image of manufacturing as dumb, dirty, dangerous, and disappearing is wrong,” he said. “Today, manufacturing is smart, safe, sustainable and surging. And, manufacturing at scale is a critical piece of the full life cycle innovation process.”

Also speaking at the dinner was Jim Phillips, chief executive officer of Nanomech and Council on Com-

A key Summit outcome was the initial development of a set of core principles to guide collaborative efforts.



Cyrus Wadia, assistant director, Clean Energy and Materials Research and Development, OSTP, makes a point during his keynote.



Tom Kallil, deputy director for Policy, OSTP, offered remarks via pre-recorded video.



Michael Idelchik, vice president, Advanced Technologies, GE Global Research, discussed a “new model of innovation.”



Keynotes and panel discussions provided a framework for facilitated breakout sessions in the afternoon.



Informal networking opportunities were another valuable aspect of the Summit.



The panel discussion on innovation in the aerospace, defense, and automotive industries (above) prompted feedback from Summit participants (left).

petitiveness board member. Phillips discussed his experiences in fostering innovation in various high technology industries. Wolfgang Schneider, 2012 TMS President, opened the evening, welcoming and thanking the attendees for their participation.

In his keynote presentation the next morning, Cyrus Wadia, assistant director, Clean Energy and Materials Research and Development, OSTP, provided an update on the U.S. Materials Genome Initiative. Joining him via a pre-recorded video message was Tom Kalil, deputy director for Policy, OSTP.

The second keynote, offered by Michael Idelchik, vice president, Advanced Technologies, GE Global Research, discussed a “new model of innovation” that GE began developing less than ten years ago. Illustrating his points with specific technology examples, Idelchik noted that GE’s approach to innovation combines groundbreaking materials and manufacturing processes to “open a whole new design window.” (See sidebar article: “2012 TMS Leaders Summit Presentations Available for Download.”)

Panel discussions sharing a variety of perspectives on accelerating materials and manufacturing innovation followed the keynotes.

Dennis Dimiduk, Air Force Research Laboratory, moderated the panel on innovation in the aerospace, defense, and automotive industries. Joining the discussion were: Gerould Young, Boeing; Julie Christodoulou, Office of Naval Research; John Allison, University of Michigan; Charles Kuehmann, QuesTeck Innovations; William Cassada, Alcoa; and Michael Bloor, ESI North America. General topics explored by the panel included the integration of quantitative tools, overlapping physical experiments and simulations, the development of shared databases and repositories, and the need to broaden the integrated computational materials engineering (ICME) community.

The second panel discussion, moderated by Kevin Hemker, Johns Hopkins University, examined innovation in the energy, electronics, and

consumer products industries. Participating in this group were: Dipu Pramanik, Intermolecular, Inc.; Theresa Kotanchek, Dow Chemical; Larry A. Wendling, 3M Research and Development; Ajay Malshe, NanoMech; and Enrique Lavernia, University of California, Davis. Themes covered by the group included how to achieve successful innovation, opportunities for collaboration, developing the future workforce needed to sustain innovation, and issues related to model validation.

The ideas and information presented in the morning served as the framework for an afternoon of facilitated breakout sessions focused on identifying key opportunities for accelerating the materials/manufacturing innovation process, as well as strategies for realizing those opportunities. These discussions informed the initial development of a set of shared principles to guide collaborative efforts. The outputs of these sessions are currently being compiled and will be shared broadly with all materials and manufacturing disciplines and communities in the coming months.

“Bringing together such diverse perspectives from across the manufacturing economy yielded important insights for developing a more dynamic approach to innovation,” said Hunt.

Hunt noted that the Orlando Summit is the start of an ongoing process, coordinated by TMS, of shared learning and collaboration among the materials and manufacturing communities. Given the positive reception and outcomes of the 2012 Leaders Summit, TMS is making plans to evolve that event into a series of subsequent summits. The overarching goal of this effort is to establish a forum where diverse industry groups can identify common, pre-competitive opportunities and shared priorities in materials/manufacturing innovation, while also laying the groundwork for collaborative action that can accelerate realization of these opportunities.

Related projects, news, and announcements will be shared on the Materials Innovation @ TMS website at [materialsinnovation.tms.org](http://materialsinnovation.tms.org).

## 2012 TMS LEADERS SUMMIT PRESENTATIONS AVAILABLE FOR DOWNLOAD



Join the dialogue on new approaches and ideas to accelerating materials and manufacturing innovation. Visit the Materials Innovation @ TMS website at [materialsinnovation.tms.org/2012TMSLeadersSummit.aspx](http://materialsinnovation.tms.org/2012TMSLeadersSummit.aspx) to download any or all of the following presentations from the 2012 TMS Materials/Manufacturing Leaders Summit:

- **“The Materials Genome Initiative”**

*Cyrus Wadia, assistant director, Clean Energy and Materials Research and Development, White House Office of Science and Technology Policy (OSTP)*

- **“Remarks on Materials and Manufacturing Innovation”**

*Tom Kalil, deputy director for Policy, OSTP (by video)*

- **“Re-inventing Industrial Research and Development”**

*Michael Idelchik, vice president, Advanced Technologies, GE Global Research*

Check the Materials Innovation @ TMS website regularly for new presentations, projects, and news related to the goals and outcomes of the 2012 TMS Materials/Manufacturing Leaders Summit.



The Summit program was designed to encourage an open sharing of experiences, ideas, and opinions.



Kevin Hemker (standing) sets the stage for the panel discussion on innovation in the energy, electronics, and consumer products industries.

## New Online Forum Provides Centralized Communication on the Materials Genome Initiative



The MGI Forum, administered by TMS on behalf of other participating materials science and engineering (MSE) professional societies, was launched in April as a means of more effectively sharing news and information related to the Materials Genome Initiative for Global Competitiveness (MGI), unveiled by President Barack Obama in June 2011.

The MGI Forum has been developed as an online digest of MGI-related initiatives and issues within and across the societies, as well as the broader materials and manufacturing community. It can be accessed at [www.mgiform.org](http://www.mgiform.org).

In addition to TMS, the professional societies that have signed on for the launch of The MGI Forum are: The American Ceramic Society (ACerS); American Society of Civil Engineers (ASCE); American Society of Mechanical Engineers (ASME); ASM International; Materials Research Society (MRS); NACE International; and the Society for the Advancement of Material and Process Engineering (SAMPE). The Forum has been designed to accommodate additional professional society participants as they are confirmed.

Each of the societies represented on the Forum contribute updates on their MGI-related activities, to include meetings, publications, educational programs, news, and other announcements. Postings on The MGI Forum can be followed on Twitter @MGIForum.

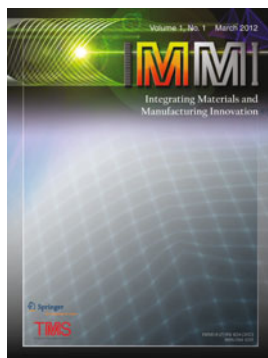
TMS's leadership in facilitating communication regarding the MGI has included bringing together 11 MSE professional societies to sign a support letter to President Obama and helping convene an MGI Scoping Session held in conjunction with the Materials Science & Technology 2011 Conference & Exhibition last October.

## TMS ANNOUNCES SECOND WORLD CONGRESS ON ICME

The 2013 World Congress on Integrated Computational Materials Engineering (ICME 2013) will take place July 7–11, 2013, in Salt Lake City, Utah. It will build on the success of the inaugural ICME Congress held last July at the Seven Springs Mountain Resort in Champion, Pennsylvania. More than 230 attendees participated, engaging in rich discussions, networking, and learning from recognized pioneers in the field of ICME. Details on ICME 2013 will be available in the coming months. The lead organizers for ICME 2013 are Mei Li, Ford Motor Company; Katsuyo Thornton, University of Michigan; Elizabeth Holm, Sandia National Laboratory; Carrie Campbell, National Institute of Standards and Technology; and Peter Gumbsch, Fraunhofer Institute for Mechanics of Materials.

For additional information on The MGI Forum, contact TMS staff at [MGIForum@tms.org](mailto:MGIForum@tms.org).

## Submit Your Paper Today to IMMI



Be among the first to submit a paper to *Integrating Materials and Manufacturing Innovation (IMMI)*, the new Open Access journal co-published by TMS and Springer.

*IMMI* is committed to building a seamless and dynamic engineering design framework supporting the accelerated discovery, development, and application of materials, materials systems, and materials processes for practical use in manufacturing. Combining the rigor of a scholarly publication with enhanced digital content, *IMMI* covers innovations from the discovery of materials to their deployment.

In its recent Call for Papers, the journal is seeking contributions that emphasize or relate to the following themes:

**Detailed case studies** of endeavors to integrate experiment and modeling to solve an enduring engineering problem in materials and manufacturing.

**Introduction of novel experimen-**

**tal or computational techniques or data sets** that help accelerate the development of advanced materials and/or manufacturing processes, and often enable bridging length or time domains.

**Best practices** in verification and validation of models, data curation, and standards and protocols for model integration and exchange of data.

**In-depth descriptions** of databases and database tools in the area of materials and manufacturing.

For additional information, visit the *IMMI* website at [IMMI.tms.org](http://IMMI.tms.org).

## Ceramic- and Nuclear-Focused Workshop



Full two-day advanced workshop, May 8-9, 2012  
Albuquerque, NM

A forum covering measurement methods, thermophysical properties, processing, ceramics & nuclear fuel

# NETZSCH

### To register please contact:

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