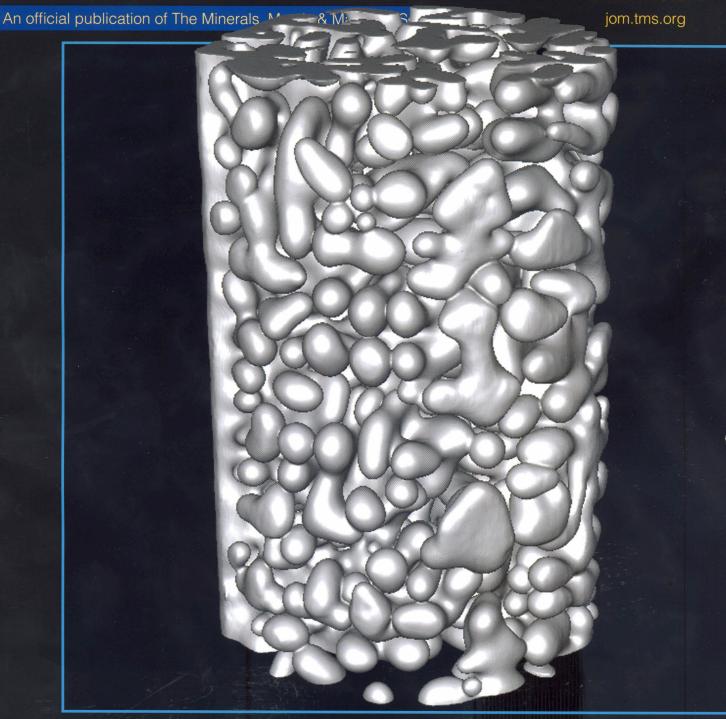
SEEING CITES: Impact Factor Trending Upward for JOM

SEPTEMBER 2012



## TMS



### **MODELING AND CHARACTERIZATION**

- Bridging the Gap: Linking Simulation and Testing
- **■** Modeling in the Casting Process
- Materials Research in Microgravity



# MODELING AND CHARACTERIZATION

Volume 64, Number 9

September 2012

### BRIDGING THE GAP: LINKING SIMULATION AND TESTING

- 1031: Bridging the Gap: Linking
  Simulation and Testing:
  Paul E. Krajewski,
  John E. Carsley, Mark R. Stoudt,
  and Yuri Hovanski
- 1032: Reducing Vehicle Weight and Improving U.S. Energy Efficiency Using Integrated Computational Materials Engineering: William J. Joost
- 1039: Bridging the Design–
  Manufacturing–Materials
  Data Gap: Material
  Properties for Optimum
  Design and Manufacturing
  Performance in Light
  Vehicle Steel-Intensive Body
  Structures: Blake K. Zuidema
- 1048: Measurements of
  Powder-Polymer Mixture
  Properties and Their Use in
  Powder Injection Molding
  Simulations for Aluminum
  Nitride: Kunal H. Kate,
  Valmikanathan P. Onbattuvelli,
  Ravi K. Enneti, Shi W. Lee,
  Seong-Jin Park, and
  Sundar V. Atre

## MODELING IN THE CASTING PROCESS

1059: Computational Fluid
Dynamics Modeling:
Application to Transport
Phenomena During the
Casting Process: Lifeng Zhang

- 1063: Modeling the Entrapment of Nonmetallic Inclusions in Steel Continuous-Casting Billets: Lifeng Zhang and Yufeng Wang
- **1075:** Similarity of Mold Metallurgy: Hong Lei
- 1080: Water Modeling of Self-Braking Submerged Entry Nozzle Used for Steel Continuous Casting Mold: Yongfeng Chen, Lifeng Zhang, Shufeng Yang, and Jingshe Li

### MATERIALS RESEARCH IN MICROGRAVITY

- **1087:** Materials Science in Reduced Gravity:

  Douglas M. Matson
- 1089: Levitated Liquid Dynamics in Reduced Gravity and Gravity-Compensating Magnetic Fields:

  Valdis Bojarevics and Robert W. Hyers
- 1097: Advanced Solidification
  Studies on Transparent Alloy
  Systems: A New European
  Solidification Insert for
  Material Science Glovebox
  on Board the International
  Space Station: A. Ludwig,
  J. Mogeritsch, M. Kolbe,
  G. Zimmermann, L. Sturz,
  N. Bergeon, B. Billia,
  G. Faivre, S. Akamatsu,
  S. Bottin-Rousseau,
  and D. Voss

- 1102: Rapid Crystallization of Levitated and Undercooled Semiconducting Material Melts: Yusuke Ishibashi, Kazuhiko Kuribayashi, and Katsuhisa Nagayama
- 1109: Nucleation and
  Thermophysical Properties
  of Glass-Forming Liquids:
  A.K. Gangopadhyay,
  R.W. Hyers, and
  K.F. Kelton

### **FEATURES**

- 1028: A Letter from the TMS
  President: What Does TMS
  Membership Say About
  You?: Wolfgang Schneider
- **1029:** JOM Impact Factor Sees Significant Boost: Lynne Robinson

### **ALSO IN THIS ISSUE**

Member News

The Young Leader

- **1021:** In the Final Analysis
- **1022:** News & Update
- 1027: Your Member Connection
- 1118: Meetings Calendar
- **1120:** Materials Resource Center: Jobs, Consultants, Marketplace
- 1121: End Notes: Congressional Fellow Works at the Epicenter of U.S. Energy Policy

### About the Cover:

This month's technical theme of modeling and characterization was also featured at the International Conference on 3D Materials Science 2012, sponsored by TMS in July. Details will be offered in an upcoming conference review; for a sneak preview, the cover features an image presented at that conference by Peter W. Voorhees, Northwestern University. It represents a liquid-solid mixture of an Al-26wt%Cu alloy, directionally solidified and then coarsened by holding at a constant 560°C for 12 hours. Interface location data was collected approximately every four minutes using in-situ, 4D x-ray tomography. This work is supported by the Department of Energy, Basic Energy Sciences, DE-FG02-99ER45782/012.