

July 10-14, 2011
Seven Springs
Mountain Resort
Seven Springs, PA



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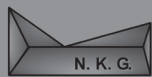


ABM

The Brazilian Metallurgy, Materials,
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The Iron and Steel
Institute of Japan

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FINAL PROGRAM

1st World Congress on Integrated Computational Materials Engineering (ICME)

www.tms.org/meetings/specialty/ICME2011/

Welcome to the 1st World Congress on Integrated Computational Materials Engineering (ICME)!

This inaugural event represents an historical moment in this emerging methodology that can unlock the potential for tremendous benefits in cost-effective and efficient materials and process design. The congress was developed through an international advisory committee representing these 14 countries:

USA • Canada • Japan • Brazil • New Zealand
Denmark • Germany • China • France • Spain
Sweden • United Kingdom • Australia • Korea

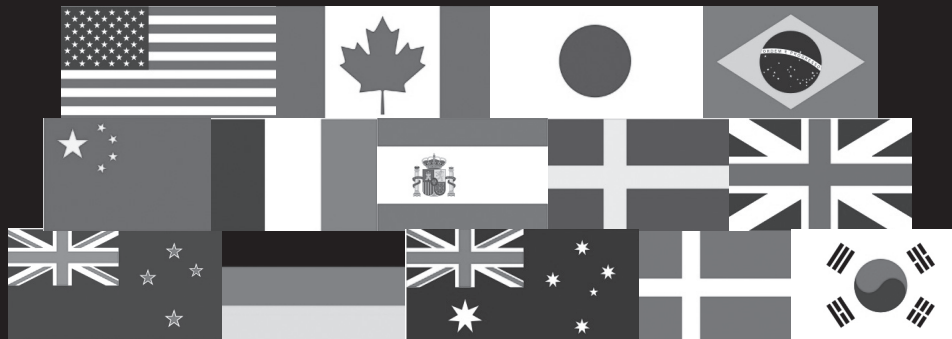


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University of Michigan, USA

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Acknowledgements

The ICME 2011 Organizing Committee would like to recognize the support of U.S. government sponsors including: the Air Force Materials Laboratory, the National Institute of Standards and Technology, the National Science Foundation, and the Office of Naval Research.

Meeting Information

ABOUT THE CONFERENCE ■■■

Registration

Conference attendees, including authors, presenters, and session chairs, are required to register and badges must be worn to gain access to the technical sessions and social functions.

Location:

Stag Pass area of the Convention Center

Hours:

Sunday, July 10	5 to 9 p.m.
Monday, July 11	7:30 a.m. to 1 p.m. & 5 to 6:30 p.m.
Tuesday, July 12	8 a.m. to 6 p.m.
Wednesday, July 13	8 a.m. to 12:30 p.m. & 4 to 6:30 p.m.
Thursday, July 14	7:30 a.m. to noon

Registration includes:

- One hard copy and CD-ROM of conference proceedings
- Shuttle to Pittsburgh International Airport on Thursday, July 14 – departures at 1, 3, 5 and 7 p.m.
- 50 oral presentations in a single session symposia format
- Sunday Night Welcome Reception
- Monday & Wednesday night poster sessions & receptions
- Tuesday barbecue/social
- Wednesday banquet

EXHIBIT ■■■

Exhibit Hours

The exhibit will be held in the Exhibit Hall where the sessions take place. The exhibit will be featured during daily breaks in technical presentations.

Exhibiting Companies (as of June 7, 2011)



Granta Design



QuesTek



Thermo-Calc Software
Thermo-Calc



IoP Publishing



Sente Software/JMatPro



UES, Inc.

Sessions

All presentations, poster sessions and the exhibit will be held in the Exhibit Hall. Interactive discussions will follow keynote presentations and groups of speakers during each session.

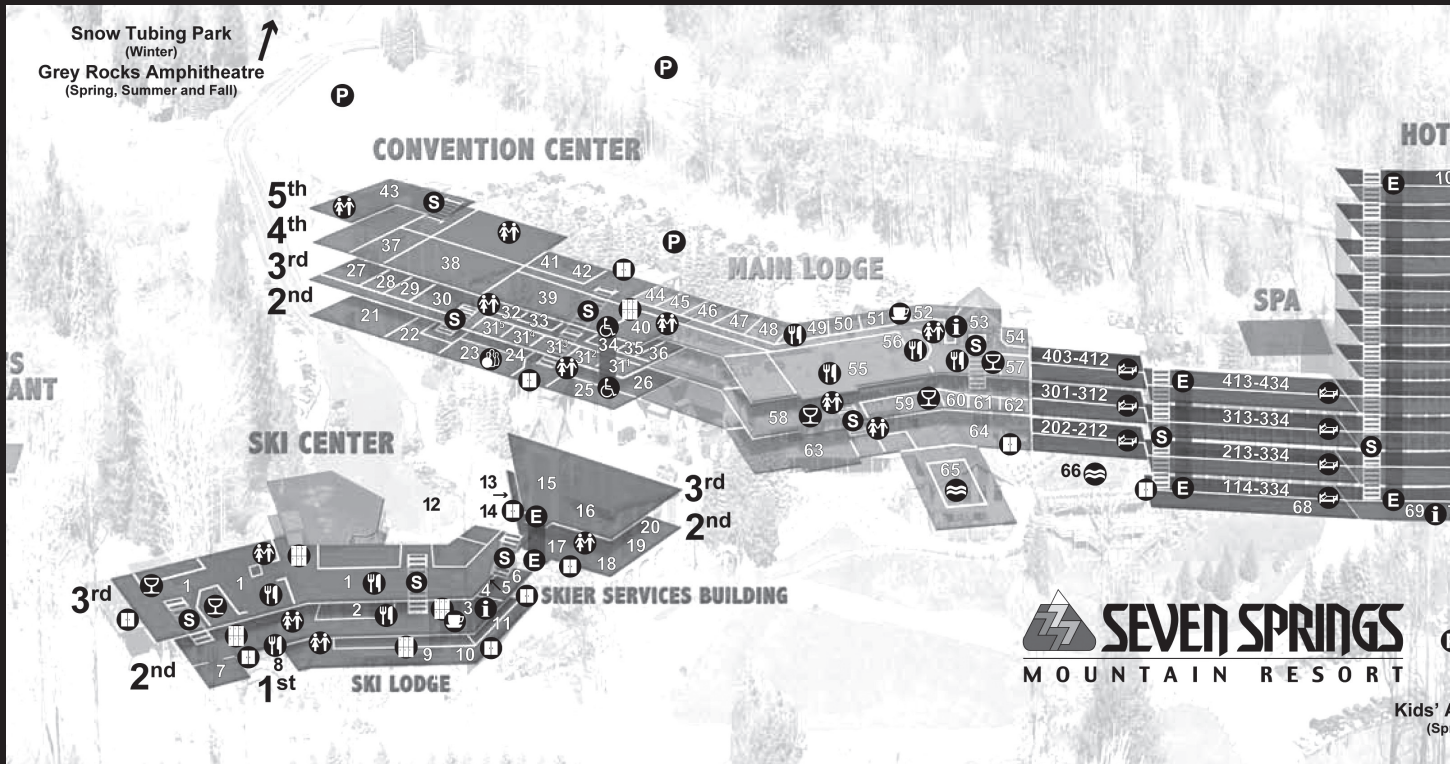
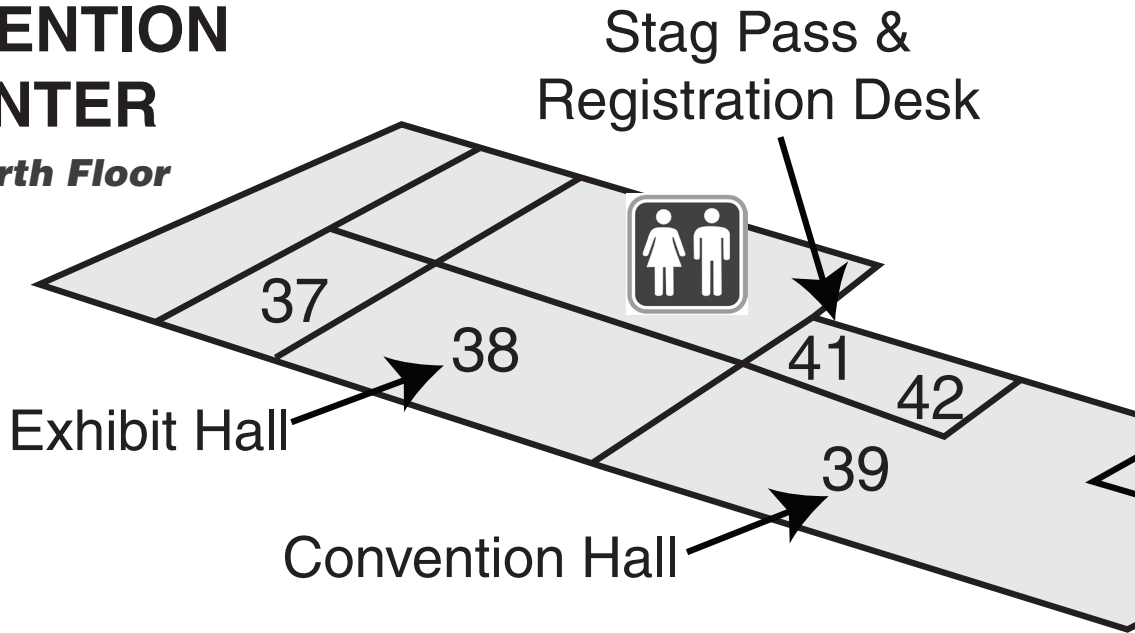
Internet Options

Wireless internet is complimentary in the hotel rooms, the hotel lobby, the center lobby, and outside of Mountain Perk in the Main Lodge.

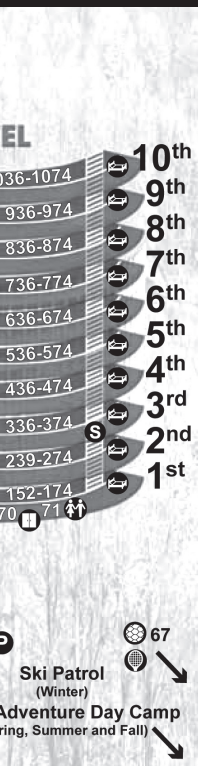
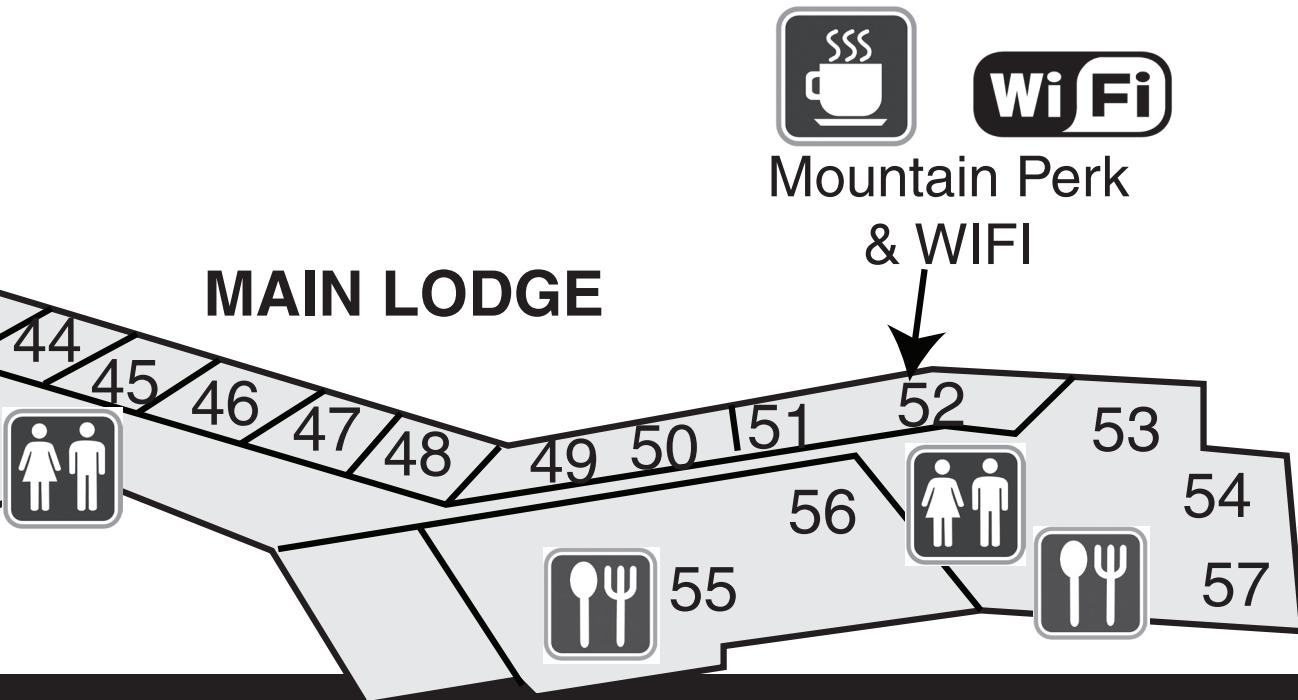


CONVENTION CENTER

Fourth Floor



Meeting Information



SKI CENTER

Ski Lodge

1. Foggy Goggle
 2. Snowbase Café
 3. Mountain Perk
 4. Mountain Memories Photography
 5. Snow Base Shoppe
 6. Maple Room
 7. Ski Check
 8. Emo's Pit
 9. Coin Lockers
 10. Junior Snowsports School
 11. Rental Shop
- ### Skier Services Building
12. Shuttle Pick-up for Parking Lot
 13. Season Pass and Group Ticket Office
 14. Ski/Board Ticket Office
 15. Timberstone Room (Spring and Summer)
 16. Willi's Ski Shop (Fall and

- (Winter)
17. Snowsports School Office
 18. Seven Springs Adventures (Summer)
 19. Kids' Corner
 20. Tiny Tots' Ski School (Winter)

CONVENTION CENTER

21. Racquetball Court
22. Exercise Room
23. Bowling Center
24. Cub Trap Game Room
25. Fox Den
26. Laurel Room
27. Dogwood Forum
28. Evergreen Room
29. Chestnut Room
30. Hemlock Room
31. Seasons Room One
31. Seasons Room Two
31. Seasons Room Three
31. Seasons Room Four
31. Seasons Room Five

32. Sunburst Forum
 33. Snowflake Forum
 34. Wintergreen Room
 35. Directors Room One
 36. Directors Room Two
 37. Exhibit Hall Annex
 38. Exhibit Hall
 39. Convention Hall
 40. Tyrol Room
 41. Stag Pass
 42. Go Team Office
 43. Festival Hall
- ### MAIN LODGE
44. Seven Springs Outfitters
 45. Gingerbread Dreams
 46. Hexie's High Country Mercantile
 47. Mother Nature's Outfitters
 48. Trademark 7
 49. Pizza Shop
 50. Sacred Ground
 51. Hair Expressions
 52. Mountain Perk

53. Guest Information
54. Conference Sales and catering
55. Timbers Restaurant
56. Dragonfly Café
57. Bavarian Lounge
58. Alpine Room
59. Matterhorn Lounge
60. Resort Realty
61. Internet Cafe
62. Bar and Entertainment Office
63. Miniature Golf
64. Bear Trap Game Room
65. Indoor Pool/Hot Tubs
66. Outdoor Pool
67. Tennis and Volleyball Courts

HOTEL

68. Ski Trips Office
69. Hotel Service
70. Shoppe at the Springs
71. Hotel Registration

**NETWORKING &
SOCIAL EVENTS**

Sunday, July 10



Keynote Speaker:
Barry Farmer, Chief Scientist,
Materials Laboratory, U.S. Air Force
Research Laboratory.

Dr. Farmer joined AFRL in 1998, but
has conducted research in polymer
physics for 30 years. He is known
for his research in computational
molecular modeling and X-ray

diffraction studies of semi-crystalline and liquid crystalline
polymers, addressing the inter-relationships between
molecular-scale interactions and macroscopic behavior.
An author of more than 100 publications, he has co-
edited a book and two journal issues on these topics.

Topic: *“Changing the Paradigm of Materials Science
and Engineering”*

Time: 8 to 8:45 p.m.

Location: Exhibit Hall

Welcoming Reception

Time: 9 p.m. until midnight

Location: Convention Hall

Sponsored by:



Monday, July 11

Congress Welcome & Opening Keynote Session

Time: 8:15 to 8:45 a.m.

Speakers: Tresa Pollock and Julie Christodoulou

Volleyball Game: Modelers vs. Experimentalists

Time: 3 to 5 p.m.

Location: Seven Springs Volleyball Area

Poster Session & Reception

Location: Main Exhibit Hall

Time: 9:50 p.m. to 12:30 a.m.

Tuesday, July 12

Conference Barbecue

Time: 6 to 8 p.m.

Location: Ski Lodge Deck

Amateur Hour & Bonfire

Time: 8 to 9 p.m.

Location: Adjacent to the Lodge

Social

Time: 9:30 p.m. to 12:30 a.m.

Location: Lodge

Wednesday, July 13

Poster Session & Reception

Time: 10 p.m. to 12:30 a.m.

Location: Exhibit Hall

Conference Banquet

Time: 4:30 to 6:15 p.m. (included with registration fee)

Location: Convention Hall

ABOUT THE LOCATION

Seven Springs Resort

The Seven Springs Mountain Resort is a full service
mountain resort and offers a multitude of on-site activities
including a 6,685-yard, 18-hole golf course, as well as a
tennis center, volleyball area, year-round swimming pool,
exercise room, racquetball courts, bowling lanes, indoor
miniature golf, family recreation center with video games,
and numerous hiking trails surrounding the resort.



POLICIES ■■■■

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 the ADA, we ask those requiring specific equipment or services to indicate their needs on the enclosed housing form or contact TMS Meeting Services in advance.

Audio/Video Recording Policy

TMS reserves the rights to any audio and video reproduction of all presentations at every TMS-sponsored meeting. 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 conference, all attendees acknowledged that they may be photographed by TMS personnel while at events and that those photos may be used for promotional purposes.

Cell Phone Use

In consideration of attendees and presenters, TMS kindly requests that you minimize disturbances by setting all cell phones and PDA's on silent while in a technical session.

SAVE *the* DATE!

International Conference on 3D Materials Science 2012

July 8-12, 2012

Seven Springs Mountain Resort, Seven Springs, Pennsylvania

Join TMS for this inaugural event and premier forum on three dimensional characterization, quantitative analysis, and development of structure-property relationships of materials.

Why You Should Attend...

- Covering a range of topical areas representing the most critical and rapidly growing areas of 3D materials science
- Intimate environment conducive to rich programming and interaction among key researchers
- Up to three concurrent sessions for ultimate interaction and discussions
- Using state-of-the-art subtopics to roadmap key areas for future research in 3D materials science

Who Should Attend

Scientists, engineers, managers, government program officers, professors and students involved in 3D materials science

Organizers

Alexis Lewis,

U.S. Naval Research Laboratory (lead)

Marc De Graef, Carnegie Mellon University, USA

Henning Poulsen, Risoe National Laboratory and DTU, Denmark

Jeff Simmons, U.S Air Force Research Laboratory

George Spanos, TMS

Sponsored by:

TMS Advanced Characterization, Testing and Simulation Committee

Visit www.tms.org/meetings/specialty/3D2012
for emerging details on this dynamic conference!

Congress Welcome and Opening Keynote Session

Monday AM
July 11, 2011
Room: Exhibit Hall
Location: Seven Springs Mountain Resort

8:15 AM Welcoming Remarks

8:20 AM Keynote

Keynote Talk to Open the ICME Congress: *Tresa Pollock*¹; *Julie Christodoulou*²; ¹University of California Santa Barbara; ²Office of Naval Research

Modeling Processing-Microstructure Relationships I

Monday AM
July 11, 2011
Room: Exhibit Hall
Location: Seven Springs Mountain Resort

8:45 AM Keynote

ICME Keynote Talk on Modeling Processing-Microstructure Relationships: *Armen Khachaturyan*¹; ¹Rutgers University

9:20 AM Discussion

9:30 AM Break

9:45 AM

Phase Field Modeling for ICME: *Ning Zhou*¹; *Rongpei Shi*¹; *Yunzhi Wang*¹; ¹Ohio State University

10:10 AM

Tools for ICME: Characterizing and Modeling Materials in Three Dimensions: *Anthony Rollett*¹; ¹Carnegie Mellon University

10:35 AM

Property Models for the Transient Constitutive Properties of Superalloys: *Rollie Dutton*¹; *Robert Goetz*²; *Triplicane Parthasarathy*³; *Lee Semiatin*¹; ¹Air Force Research Laboratory; ²Rolls Royce Corporation; ³UES, Inc.

11:00 AM Discussion

Discussion Leader: *Peter Collins*, University of North Texas

11:15 AM Break

11:30 AM

Correlated Nucleation of Precipitates in Magnesium Alloy WE54: *Hong Liu*¹; *Yipeng Gao*²; *Yunzhi Wang*²; *Jian-Feng Nie*¹; ¹Monash University; ²The Ohio State University

11:55 AM

Coupling Advanced Characterization with First-Principles Computations to Investigate Omega Precipitation in Titanium Alloys: *Arun Devaraj*¹; *Soumya Nag*¹; *Robert Williams*²; *Srinivasan Rajagopalan*³; *Srinivasan Srivilliputhur*¹; *Hamish Fraser*²; *Rajarshi Banerjee*¹; ¹University of North Texas; ²Ohio State University; ³Exxon Mobil Research and Engineering Company

12:20 PM

Developing Integrated CALPHAD Tools and Databases for the ICME Community: *Paul Mason*¹; *Anders Engstrom*²; *Qing Chen*²; *Johan Bratberg*²; ¹Thermo-Calc Software Inc; ²Thermo-Calc Software AB

12:45 PM Discussion

Discussion Leader: *George Spanos*, TMS

Modeling Processing-Microstructure Relationships II

Monday PM
July 11, 2011
Room: Exhibit Hall
Location: Seven Springs Mountain Resort

6:15 PM Keynote

From Processing to Properties: Through-Process Modeling of Aluminum Sheet Fabrication: *Günter Gottstein*¹; *Volker Mohles*¹; ¹RWTH Aachen University

6:50 PM Discussion

7:00 PM

Topological Mechanism of Grain Growth- Simulation and Experimental Studies: *Robert DeHoff*¹; *Burton Patterson*¹; *Zhiwei Sun*²; *Veena Tikare*³; *Alan Sprague*²; *Kristofer Hannesson*¹; ¹University of Florida; ²University of Alabama at Birmingham; ³Sandia National Lab

7:25 PM

Advancements in Characterization and Modelling of Boundary Migration during Recrystallization: *Dorte Jensen*¹; *Yubin Zhang*¹; *Andy Godfrey*²; *Nele Moelans*³; ¹Danish-Chinese Center for Nanometals, Materials Research Division, Risø National Laboratory for Sustainable Energy, Technical University of Denmark; ²Tsinghua University; ³Katholieke Universiteit Leuven

7:50 PM Discussion

Discussion Leader: *Alexis Lewis*, Naval Research Laboratory

8:05 PM Break

8:20 PM

A Nucleation Model for Pressurized Solidification of A356 Alloy: *Zhiqiang Han*¹; *Xiaoran Huang*¹; *Baicheng Liu*¹; ¹Tsinghua University

8:45 PM

Through Process Modeling Approach to Optimizing Hot Rolling Process Parameters for Microstructural Control in Al Alloys: *Nitin Singh*¹; *Richard Hamerton*¹; ¹Novelis Global Technology Center

9:10 PM

Process Modelling of Extrusion of AA3xxx Aluminum Alloys: *Warren Poole*¹; *Mary Wells*²; *Nick Parson*³; *Qiang Du*¹; *Y. Geng*¹; *Payman Babaghorbani*¹; *Yahya Mahmoodkhani*²; ¹UBC; ²University of Waterloo; ³Rio Tinto Alcan

9:35 PM Discussion

Discussion Leader: *John Allison*, University of Michigan

Technical Program

Poster Session and Reception I: Modelling Microstructure-Property Relationships

Mon, 9:50 PM - 12:30 AM Room: Exhibit Hall
July 11, 2011

{11-21} Twin Boundary Energies of Hexagonal Close-Packed Metals: *Nina Lane*¹; Igor Abrikosov²; Lars Hultman²; Michel Barsoum¹; ¹Drexel University; ²Linköping University

A Computational Study of Hierarchy in Fatigue Deformation Heterogeneities in a Titanium Alloy: *Sushant Jha*¹; Christopher Szczepanski¹; Craig Przybyla²; James Larsen²; ¹Air Force Research Laboratory/Universal Technology Corporation; ²Air Force Research Laboratory

A Crystal Plasticity Theory for Void Growth in a Creeping Single Crystal: *Ankit Srivastava*¹; A. Needleman¹; ¹University of North Texas

A Quantitative 3-D Crystallographic Model for Fatigue Crack Propagation through Grain Boundaries: *Wei Wen*¹; Tongguang Zhai¹; ¹University of Kentucky

Ab Initio Molecular Dynamics Study of Liquid Ni-W Alloys: *William Yi Wang*¹; S. L. Shang¹; H. Z. Fang¹; Y. Wang¹; S. N. Mathaudhu²; X. Hui³; Z. K. Liu¹; ¹Penn State University; ²US Army Research Laboratory; ³University of Science and Technology Beijing

Ab Initio Study of Hcp-to-Bcc Phase Transition in Ti: *Zhi-Gang Mei*¹; Shun-Li Shang¹; Yi Wang¹; Zi-Kui Liu¹; Vidvuds Ozolins²; ¹Pennsylvania State University; ²University of California, Los Angeles

Advanced Techniques for Modeling Dislocation Evolution at the Micron Scale: *Jaafar El-Awady*¹; ¹Johns Hopkins University

An Integrated Modeling and Experimental Study of Static Strain Aging in Linepipe Steels: *Neeraj Thirumalai*¹; Ning Ma¹; Nathan Nissley²; Rick Noecker²; William Lambert¹; Raghavan Ayer¹; ¹ExxonMobil Research and Engineering; ²ExxonMobil Upstream Research Company; ³ExxonMobil Development Company

Application of the Diffusion-Multiple Approach and Materials Property Microscopy Tools for Accelerated Establishment of Materials Databases for ICME: *Ji-Cheng Zhao*¹; David Cahill²; ¹The Ohio State University; ²University of Illinois at Urbana-Champaign

Characterizing Residual Stresses in Monolithic Silicon-Carbide through the Use of Finite Element Analysis: *Brian Munn*¹; Keyu Li¹; ¹Oakland University

Combined Phase Field-Potts Model for Grain Growth and Compositional Evolution in Nuclear Fuels: *Eric Homer*¹; Elizabeth Holm¹; Veena Tikare¹; ¹Sandia National Laboratories

Computational and Experimental Investigation of Defects and Stability of Perovskites: *Sung Hoon Lee*¹; James Saal²; Zi-Kui Liu¹; ¹The Pennsylvania State University; ²Northwestern University

Computational and Experimental Investigations of Grain Boundary Properties in Fe-Zr Alloys: *Brian VanLeeuwen*¹; Jing Li¹; Elizabeth Dickey¹; Zi-Kui Liu¹; Kristopher Darling²; ¹The Pennsylvania State University; ²Army Research Laboratory

Computational Study of the Effects of Ce and Sn on Phase Relations in Mg Alloys: *Bi-Cheng Zhou*¹; Justin Savrock²; Shun Li Shang¹; Zi-Kui Liu¹; ¹The Pennsylvania State University; ²Tyco Electronics Corporation

Density Functional Theory Based Calculations of Site Occupancy in the Gamma Prime Ni₃Al Phase of Nickel Based Super Alloys: *Jincheng Du*¹; Mrunal Chaudhari¹; ¹University of North Texas

Designing Smart Coatings with Dynamic Local Contact Angle (DLCA) Technique Based Multiscale Computational Tools: *Santanu Chaudhuri*¹; ¹Washington State University

Development of a Processing-Structure-Fatigue Model for Single-Crystal Ni-Based Superalloys: *Clinique L. Brundidge*¹; Jonathan D. Miller²; Tresa M. Pollock³; ¹University of Michigan; ²Air Force Research Laboratory/RXLM; ³University of California, Santa Barbara

Direct Approach to Phonons of Polar Materials: *Yi Wang*¹; ShunLi Shang¹; Long-Qing Chen¹; Zi-Kui Liu¹; ¹Penn State

Effects of Dopants on the Structure and Diffusivity of Liquid Cr₂O₃: An Ab-Initio Molecular Dynamics Study: *Huazhi Fang*¹; W. Y. Wang¹; Zi-Kui Liu¹; ¹The Pennsylvania State University

Effects of Intermediate Temperature Long Term Exposure on Mechanical Behavior of 5083-H116 and 5456-H116: J.K. Brosi¹; M. Seifi¹; J.J. Lewandowski¹; ¹Case Western Reserve University

Elastoplastic Phase Field Model for Time-Dependent Hydrogen Diffusion, Hydride and Hydride Blister Formation and Fracture Initiation in Zirconium: *San-Qiang Shi*¹; ¹The Hong Kong Polytechnic University

Energy and Structure of Interface Boundaries in Multilayer Cu-Nb Nanocomposite: *Alexey Lipnitskii*¹; Ivan Nelasov¹; Denis Maradudin¹; Yuri Kolobov¹; ¹Belgorod State University

First Principles Calculations of Physical Properties of Nb-Si Alloy: *Lizhi Ouyang*¹; ¹Tennessee State University

First Principles Modeling of Shape Memory Alloy Magnetic Refrigeration Materials: Boyd Evans¹; *Don Nicholson*¹; Khorgolkhuu Odbadrakh¹; Orlando Rios¹; Gerard Ludtka¹; Nagraj Kulkarni¹; ¹Oak Ridge National Laboratory

First-Principles Calculations and Thermodynamic Modeling of the Hf-W System: *Alyson Lieser*¹; Arkapol Saengdeejing¹; Chelsey Zacherl¹; Zi-Kui Liu¹; ¹The Pennsylvania State University

First-Principles Calculations of Binary Al Compounds: Enthalpies of Formation and Elastic Properties: *Jiong Wang*¹; ShunLi Shang¹; Yi Wang¹; Zhigang Mei¹; Yong Du²; Zi-Kui Liu¹; ¹Penn State Univ.; ²Central South Univ.

First-Principles Calculations of Elastic Constants and Diffusion Coefficients of Mg-X Binary Systems: *Lei Zhang*¹; Shunli Shang¹; Zikui Liu¹; ¹Pennsylvania State University

ICME for Reliable Electronic Packaging and Interconnection: *Zhiheng Huang*¹; Paul Conway²; Alan Dinsdale³; ¹Sun Yat-sen University; ²Loughborough University; ³National Physical Laboratory

Improving the Computation of Diffuse Interface Critical Nuclei: *Jinyan Zhang*¹; Lei Zhang²; Longqing Chen¹; Qiang Du¹; ¹Penn State Univ; ²University of California at Irvine

Influence of the Microstructure on Small Fatigue Cracks in RR1000: *Gustavo Castelluccio*¹; David McDowell¹; ¹Georgia Institute of Technology

Informatics for Mapping Engineering Data: Krishna Rajan¹; *Scott Broderick*¹; ¹Iowa State University

In-Situ Microscale Fatigue Study to Determine the Effect of Microstructural Neighborhoods on Crack Initiation Mechanisms and Lifetimes: *Christopher Szczepanski*¹; Sushant Jha¹; Paul Shade¹; Robert Wheeler²; James Larsen³; ¹UTC/AFRL; ²UES; ³Air Force Research Laboratory

Integrated Computational Design, Development, Qualification and Application of New High-Performance, Carburizing Steels: *J.A. Wright*¹; J.T. Sebastian¹; C.J. Kuehmann¹; Jeff Grabowski¹; ¹QuesTek Innovations LLC

Integrating 3D Experimental Data into Microstructural Models: Data Selection and Critical Feature Identification: *Alexis Lewis*¹; Siddiq Qidwai²; Andrew Geltmacher¹; David Rowenhorst¹; ¹Naval Research Laboratory; ²SAIC

Integrating Microstructural and Thermostructural Models for Optimized Nickel-Based Actively-Cooled Combustor Panels in Hypersonic Vehicles: *Natasha Vermaak¹; Sara Pérez-Bergquist²; Tresa Pollock¹; ¹UCSB; ²LANL*

Lattice Dynamics and Thermodynamics of Lithium Battery Materials LiMPO₄ (M = Mn, Fe, Co, and Ni): A Comparative First-Principles Study: *Shun-Li Shang¹; Yi Wang¹; Zi-Kui Liu¹; ¹Pennsylvania State University*

Matching Statistics of Synthetic Microstructures to Experimental Grain Size: *Joseph Tucker¹; A. D. Rollett¹; Clayton Stein¹; Adrian Loghin²; Lisa Chan³; ¹Carnegie Mellon University; ²General Electric; ³EDAX*

Microstructural Property Considerations in the Design of Stainless Steel Articles Case Hardened by Low-Temperature Carburization: *Jeff Rubinski¹; Sunniva Collins¹; Peter Williams¹; ¹Swagelok Company*

Microstructure-Sensitive Modeling of Life-Limiting Fatigue Behavior in Structural Alloys: *Rajesh Prasannavenkatesan¹; Heng-Jeng Jou¹; Gregory Olson¹; David McDowell²; ¹QuesTek Innovations LLC; ²Georgia Institute of Technology*

Modeling and Simulation of Process-Structure-Property of Magnesium Alloy Castings: *Zhiqiang Han¹; Liang Huo¹; Baicheng Liu¹; ¹Tsinghua University*

Modeling of Additivity Rule for Strengthening Mechanisms in Magnesium Alloys Containing Rare Earth Elements: *Krista Kalac¹; ¹Missouri S&T*

Modeling of Tracer Diffusion in Magnesium Polycrystals: *Bala Radhakrishnan¹; Nagraj Kulkarni¹; Yong-Ho Sohn²; Jerry Hunter³; Chad Parish¹; ¹Oak Ridge National Laboratory; ²University of Central Florida; ³Virginia Tech. University*

Modeling Precipitation Strengthening in Al-Zr-Sc Using Experimentally-Determined Microstructures: *Richard Karnesky¹; Keith Knipling²; David Dunand³; David Seidman³; ¹Sandia National Laboratories; ²Naval Research Laboratory; ³Northwestern University*

Multi-Strain Induced Deformation Twin in Nanocrystalline Copper: *Chen Kaigu¹; Shi Sanqiang¹; ¹The Hong Kong Polytechnic University*

Nondestructive Evaluation Modeling as an Integrated Component of ICMSE: *James Blackshire¹; Ray Ko²; Ming-Yung Chen¹; ¹Air Force Research Laboratory; ²University of Dayton Research Institute*

Numerical Simulation of Brake Discs of CRH3 High-Speed Trains Based on ANSYS: *Yu Liang¹; Lu Senkai¹; Jiang Yan Li¹; Luo Kun¹; Ru Hongqiang¹; ¹Key Laboratory of New Processing Technology for Nonferrous Metals and Materials, Ministry of Education, College of Materials Science and Engineering*

On Sintering Stress in Complex Powder Compacts: *Veena Tikare¹; Cristina Garcia C.²; Eugene Olevsky²; Burton Patterson³; ¹Sandia National Laboratories; ²San Diego State University; ³University of Florida*

On the Cyclic Plastic Behavior of Nickel-Based Directionally Solidified Superalloy with Partial Recrystallization by Crystal Plasticity Modeling: *Xianfeng Ma¹; Zheng Duan²; Huiji Shi²; ¹University of Michigan; ²Tsinghua University*

Oxygen Absorption on Aluminum Alloy S- and Theta- Intermetallic Phases: A Modeling Study: *Joseph Osborne¹; ¹The Boeing Company*

Phase-Field Simulations of Elastic and Plastic Properties of Polycrystalline Magnesium: *Saswata Bhattacharya¹; Guang Sheng¹; Hui Zhang¹; Kunok Chang¹; Ricardo Lebensohn²; Suveen Mathaudhu³; Zi-Kui Liu¹; Long-Qing Chen¹; ¹Pennsylvania State University; ²Los Alamos National Laboratory; ³US Army Research Office*

PolymerModeler Tool at NanoHUB.org: *Benjamin Haley¹; Nate Wilson¹; Chunyu Li¹; Andrea Arguelles²; Yae-Ji Kim¹; Alejandro Strachan¹; ¹Purdue University; ²University of Texas, Pan-America*

Predicting Diffusion Coefficients in Magnetic Phases by First-Principles Methodologies: *Chelsey Zacherl¹; Yi Wang¹; ShunLi Shang¹; Zi-Kui Liu¹; ¹The Pennsylvania State University*

Realistic Modeling of 3D Microstructure Evolution for Magnesium Alloys: *Paul Wang¹; Yuxiong Mao¹; Quancang Ma¹; Esteban Marin¹; ¹Mississippi State University*

Thermodynamic Modeling of the Cu-Hf-Ni System and Its Implications on Hf-Based Bulk Metallic Glass Formation: *Arkapol Saengdeejing¹; Laszlo Kecskes²; Robert Woodman²; Bradley Klotz³; Yu Zhong¹; Zi-Kui Liu¹; ¹The Pennsylvania State University; ²Army Research Laboratory; ³Dynamic Science, Inc*

Topological Measures of Three-Dimensional Grain Structures from Phase-Field Simulations and the MacPherson-Srolovitz Relation: *Kunok Chang¹; Carl Krill²; Long-Qing Chen¹; ¹Penn State; ²Ulm University*

Towards a Predictive Understanding of Polymer Composites: Multi-Resolution Modeling, Theory and Experiments: *Alejandro Strachan¹; ¹Purdue University*

Technical Program

Modeling Microstructure-Property Relationships I

Tuesday AM
July 12, 2011

Room: Exhibit Hall
Location: Seven Springs Mountain Resort

8:15 AM Keynote

Microstructure-Based Description of the Deformation of Metals: Theory and Application: Dirk Helm¹; Alexander Butz¹; Dierk Raabe²; Peter Gumbsch³; ¹Fraunhofer Institute for Mechanics of Materials IWM; ²Max-Planck-Institute for Iron Research; ³Fraunhofer Institute for Mechanics of Materials IWM - and - Institute for Applied Materials IAM, Karlsruhe Institute of Technology KIT

8:50 AM Discussion

9:00 AM

Large Scale Finite Element Computations Using Real Grain Microstructures: Henry Proudhon¹; ¹MINES ParisTech

9:25 AM

3D Modelling and Measurement of Plastic Deformation and Grain Rotation at the Grain-to-Grain Level: David Gonzalez¹; Andrew King²; Joao Quinta da Fonseca¹; Philip Withers¹; ¹University of Manchester; ²ESRF

9:50 AM

Multi-Time Scaling Crystal Plasticity FE Models Dwell Fatigue Initiation in Polycrystalline Alloys: Somnath Ghosh¹; ¹The Ohio State University

10:15 AM Discussion

Discussion Leader: Tresa Pollock, University of California, Santa Barbara

10:30 AM Break

10:50 AM

Coupling of Deformation Mechanisms with Phase Field and Crystal Plasticity Modeling of Polycrystalline Ni Base Superalloys at Higher Temperatures: Michael Mills¹; Yunzhi Wang¹; Somnath Ghosh¹; Hallee Deutchman¹; Patrick Phillips¹; Ning Zhou¹; Mahendra Samal¹; David Mourer²; Ken Bain²; Andrew Wessman²; ¹The Ohio State University; ²GE Aviation

11:15 AM

ICME for Turbine Blades: Progress and Challenges: Tresa Pollock¹; ¹University of California Santa Barbara

11:40 AM

ICME of Magnesium: From Electronic Structures to Mechanical Properties: Zi-Kui Liu¹; Shun Li Shang¹; Yi Wang¹; Long-Qing Chen¹; Saswata Bhattacharya¹; Suveen Mathaudhu²; ¹The Pennsylvania State University; ²US Army Research Office

12:05 PM Discussion

Discussion Leader: Paul Dawson, Cornell University

Modeling Microstructure-Property Relationships II

Tuesday PM
July 12, 2011

Room: Exhibit Hall
Location: Seven Springs Mountain Resort

1:45 PM Keynote

Modeling Microstructure-Property Relationships in ICME: Elizabeth Holm¹; ¹Sandia National Laboratories

2:20 PM Discussion

2:30 PM

Smoothed-Boundary-Method for Determining Elastic Stress Distribution in Complex Microstructures: Hui-Chia Yu¹; Katsuyo Thornton¹; ¹University of Michigan, Ann Arbor

2:55 PM

Computational Methods for New Materials Development: The “Atoms to Airplanes” Concept: Stephen Christensen¹; Andrea Browning¹; Jon Gosse¹; ¹Boeing Research and Technology

3:20 PM

Virtual Mechanical Testing of Composites: From Materials to Components: Javier LLorca¹; Carlos González¹; ¹Polytechnic University of Madrid/IMDEA Materials Institute

3:45 PM Discussion

Discussion Leader: Greg Schoeppner, Air Force Research Laboratory

4:00 PM Break

4:20 PM

Development of Dislocation Structure under Shear Deformation in Single and Poly Crystals of Steels with BCC Structure: Masaaki Sugiyama¹; Youichi Ikematsu¹; Akira Uenishi¹; Tadashi Hasebe²; ¹Nippon Steel Corporation; ²Kobe University

4:45 PM

Design of Multifunctional Material Structures Using Topology Optimization with Feature Control: James Guest¹; Seunghyun Ha¹; ¹Johns Hopkins University

5:10 PM

Development of Neural Networks for the Prediction of the Interrelationship between Microstructure and Properties of Ti Alloys: Peter Collins¹; S. Koduri²; D. Huber²; B. Welk²; H. Fraser²; ¹University of North Texas; ²The Ohio State University

5:35 PM Discussion

Discussion Leader: Neeraj Thirumalai, Exxon Mobile

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ICME in Education

Wednesday AM
July 13, 2011
Room: Exhibit Hall
Location: Seven Springs Mountain Resort

8:30 AM Keynote

ICME Education: *Greg Olson*¹; ¹Northwestern University

9:05 AM Discussion

9:15 AM

Integrated Computational Materials Engineering in the Materials Science and Engineering Curriculum: Richard LeSar¹; *Gregory Rohrer*²; ¹Iowa State University; ²Carnegie Mellon University

9:40 AM

Experience of Teaching a Computational Thermodynamics and Kinetics Course at Ohio State: *Ji-Cheng Zhao*¹; Sudarsanam Babu¹; ¹The Ohio State University

10:05 AM

The Doctoral Training Centre (DTC) on Theory and Simulation of Materials (TSM) at Imperial College London: *Adrian Sutton*¹; ¹Imperial College London

10:30 AM Discussion

Discussion Leader: Katsuyo Thornton, University of Michigan

10:45 AM Break

11:05 AM

Teaching Transport Phenomena through Spreadsheet Programming and Numerical Methods: *James McGuffin-Cawley*¹; ¹Case Western Reserve University

11:30 AM

ICME-Related “Scripts/Examples/Modules” for Undergraduate Classroom Use: *Laura Bartolo*¹; Lan Li¹; Cathy Lowe¹; Doug Stanley¹; Daniel Lewis²; William Gathright²; ¹Kent State University; ²Rensselaer Polytechnic Institute

11:55 AM

History of ICME in the European Aluminium Industry: *Juergen Hirsch*¹; Kai Karhausen¹; ¹Hydro Aluminium Rolled Products GmbH

12:20 PM Discussion

Discussion Leader: Tony Rollett, Carnegie Mellon University

Information Infrastructure

Wednesday PM
July 13, 2011
Room: Exhibit Hall
Location: Seven Springs Mountain Resort

6:15 PM Keynote

NSF Cyberinfrastructure for the 21st Century: *Ron Pennington*¹; ¹National Science Foundation

6:50 PM Discussion

7:00 PM

Interactive Data Storage and Collaboration Tools for ICME Research: *Andrew Geltmacher*¹; Matt Heying²; Krishna Rajan²; ¹Naval Research Laboratory; ²Iowa State University

7:25 PM

Cyber-Enabled Materials Simulations Via Nanohub.org: *Alejandro Strachan*¹; Ravi Pramod Vedula¹; Benjamin Haley¹; ¹Purdue University

7:50 PM

Microstructure Databases and RVEs Based on Higher-Order Spatial Correlations: *Surya Kalidindi*¹; Stephen Niezgod¹; David Turner¹; Ayman Salem²; ¹Drexel University; ²Materials Resources, LLC

8:15 PM Discussion

Discussion Leader: Jim Warren, NIST

8:30 PM Break

8:45 PM

Materials Information Management and the Future of ICME: Will Marsden¹; *Ben Meyer*¹; ¹Granta

9:10 PM

Atomistic Simulation and ICME: Workshops, Repositories, and Comparisons: *Chandler Becker*¹; ¹National Institute of Standards and Technology

9:35 PM

Open Knowledge Base of Interatomic Models (Openkim.org): An Online Platform for Developing, Testing and Archiving Empirical Potentials: Ellad Tadmor¹; Ryan Elliott¹; James Sethna²; Chandler Becker³; Valeriu Smirichinski¹; Noam Bernstein⁴; *Ronald Miller*⁵; ¹University of Minnesota; ²Cornell University; ³NIST; ⁴Naval Research Laboratories; ⁵Carleton University

10:00 PM Discussion

Discussion Leader: Andy Geltmacher, Naval Research Laboratory

Technical Program

Poster Session and Reception II: ICME Information Infrastructure, Education and Success Stories

Wed, 10:00 PM - 12:30 AM
July 13, 2011

Room: Exhibit Hall

Advancing ICME Capability through Industry/University Relationships: *Patrick Anderson*¹; Xiaolan Ai¹; E. Buddy Damm¹; Krich Sawamiphakdi¹; ¹The Timken Company

Application of ICME towards the Design and Development of a Non-Toxic Drop-In Replacement for High-Strength BeCu Alloys Used in Aerospace Bushing Applications: *Abhijeet Misra*¹; Eric Fodran²; ¹QuesTek Innovations LLC; ²Northrop Grumman

Computational Materials Science and Engineering in University Education: *Katsuyo Thornton*¹; Samantha Nola¹; R. Edwin Garcia²; Mark Asta³; Greg Olson⁴; ¹University of Michigan; ²Purdue University; ³University of California, Berkeley; ⁴Northwestern University

Cyber-Enabled Ab Initio Simulations in Nanohub.org: Simulation Tools and Learning Modules: *Ravi Pramod Vedula*¹; Benjamin Haley¹; Alejandro Strachan¹; ¹Purdue University

Cyberinfrastructure Support for Integrated Computational Material Engineering: *Tomasz Haupt*¹; ¹Mississippi State University

Extensible, Self-Optimizing Phase Equilibrium Infrastructure (ESPEI): Applications in Magnesium Alloys: *Shun-Li Shang*¹; Yi Wang¹; Zi-Kui Liu¹; ¹MaterialsInformatics LLC

FiPy: Modeling Phase Transformations in Python: Jonathan Guyer¹; Daniel Wheeler¹; James O'Beirne²; *James Warren*¹; ¹NIST; ²George Mason University

Informatic Tools for Assessment of Data Completeness for Model Development in Magnesium Alloy Databases: Kim Ferris¹; *Dumont Jones*²; ¹Pacific Northwest National Laboratory; ²Proximate Technologies, LLC

Insight into Alloy Design and Performance via Ab Initio Calculations: Walter Wolf¹; Mikael Christensen¹; Clive Freeman¹; Paul Saxe¹; Erich Wimmer¹; *Mathew D. Halls*¹; ¹Materials Design

Integrated Computational Design of Hot-Tearing Resistant High-Strength Aluminum Alloy Castings: *Abhijeet Misra*¹; Charles Kuehmann¹; ¹QuesTek Innovations LLC

Research on Numerical Simulation of the Temperature Field in New Mode Cathode Cells: *Jiang YanLi*¹; Lu Senkai¹; Yu Liang¹; Feng Naixiang¹; ¹Key Laboratory of New Processing Technology for Nonferrous Metals and Materials, Ministry of Education

Stability of Fe-C Martensite—Effect of Zener-Ordering: *Reza Naraghi*¹; Malin Selleby¹; ¹KTH (Royal Institute of Technology)

Tracer Diffusion Databases for ICME: *Nagraj Kulkarni*¹; Peter Todd¹; Balasubramaniam Radhakrishnan¹; Yong-ho Sohn²; Sarah Brennan²; Kevin Coffey²; Jerry Hunter³; ¹Oak Ridge National Laboratory; ²University of Central Florida; ³Virginia Tech University

Unintended Consequences: How Qualification Constrains Innovation: *Craig Brice*¹; ¹NASA Langley Research Center

What Barriers Prevent ICME from Becoming Part of the Designer's Toolbox?: *Paul Ret*¹; ¹Air Force Research Laboratory

Poster Session and Reception II: Modelling Processing-Microstructure Relationships

Wed, 10:00 PM - 12:30 AM
July 13, 2011

Room: Exhibit Hall

3D Microstructural Characterization of Laser Deposited Titanium Carbide Reinforced Ni Matrix Composites: Sundeeep Gopagoni¹; Kristopher Mahdak¹; John Sosa²; Junyeon Hwang¹; Peter Collins¹; Thomas Scharf¹; Jaimie Tiley³; Hamish Fraser²; *Rajarshi Banerjee*¹; ¹University of North Texas; ²Ohio State University; ³Air Force Research Laboratory

3D Modeling of Martensitic Transformations in Steels by Integrating Thermodynamics, Phase Field Modeling and Experiments: *Hemantha Yeddu*¹; John Ågren¹; Annika Borgenstam¹; ¹KTH (Royal Institute of Technology)

A New Universal Mechanism of Intermediate Temperature Embrittlement for Metals and Alloys: Tingdong Xu¹; ¹Central Iron and Steel Research Institute

A Phase-Field Model for Deformation Twinning: *Tae Wook Heo*¹; Chris Elwell¹; Yi Wang¹; Saswata Bhattacharya¹; Xin Sun²; Shenyang Hu²; Long-Qing Chen¹; ¹The Pennsylvania State University; ²Pacific Northwest National Laboratory

A Simulation for Grain Growths and Phase Transformations Based on a Grain Boundary and Interfacial Energy Database: Hyun-Kyu Kim¹; Seong Gyoon Kim²; *Byeong-Joo Lee*¹; ¹Pohang University of Science and Technology; ²Kunsan National University

Building Better Diffusion Mobility Databases: *Carelyn Campbell*¹; Ursula Kattner¹; ¹National Institute of Standards and Technology

Carbon Migration Studies on Diffusion Bonding of Dissimilar Cast Irons with Different Nodularities: *Ali-Reza Kiani-Rashid*¹; B. Hashemi¹; ¹Ferdowsi Univ. of Mashhad

Computational Analysis of Oxide Inclusions in Aluminum Castings: *Gerald Backer*¹; Qigui Wang²; ¹Flow Logic; ²GM Powertrain

Computational Tools for Predicting the Influence of Microstructure on Monotonic and Cyclic Properties of Metals: *John Allison*¹; Xianfeng Ma²; ¹Ford Motor Company; ²University of Michigan

Development of 3-Dimensional Characterization Techniques and Their Role in ICME: *Peter Collins*¹; John Sosa²; Daniel Huber²; Robert Williams²; Hamish Fraser²; ¹University of North Texas; ²The Ohio State University

Effect of Pulling Velocity on Dendrite Arm Spacing in Steady-State Directionally Solidified Transparent Alloy: Numerical Simulation: Yufeng Shi¹; *Qingyan Xu*¹; Ming Gong¹; Baicheng Liu¹; ¹Tsinghua University

Experimental Investigation of Deformation Mechanisms Present in Ultra-Fine-Grained Metals: *Adam Kammers*¹; Samantha Daly¹; ¹The University of Michigan

Extrusion Modeling of AM30 Magnesium Alloy: *Paul Wang*¹; Esteban Marin¹; Clemence Bouvard¹; ¹Mississippi State University

Finite Element Based Stress Analysis and Optimization of Crankshaft: *Keyur Jadhav*¹; Sumeer Khanna²; Sanket Singh²; Bharat Chauhan²; ¹Texas A&M University, Kingsville; ²Maharaja Sayajirao University, Baroda

Finite Element Modeling of Pharmaceutical Powder Compaction Using the Drucker-Prager Cap Model in ABAQUS: *Will O'Connor*¹; Antonios Zavalianos¹; ¹Drexel University

In-Situ Neutron Diffraction Aided Modeling of Texture Evolution in Magnesium and Aluminum Polycrystals: *Bala Radhakrishnan*¹; Sarma Gorti¹; Grigoreta Stoica¹; Govindarajan Muralidharan¹; Xun-Li Wang¹; ¹Oak Ridge National Laboratory

Integrated Modeling of Microstructure Evolution during Welding: Sudarsanam Babu¹; *Ji-Cheng Zhao*¹; ¹Ohio State University

Integrated Modeling of Tundish and Continuous Caster to Meet Quality Requirements of Cast Steels: *Amarendra Singh*¹; Ravindra Pardeshi¹; Sharad Goyal¹; ¹Tata Consultancy Services

Material Modeling of Anisotropic Viscoplastic Behavior of Magnesium during Sheet Forming: *Paul Wang*¹; Youssef Hammi¹; Doug Bammann¹; ¹Mississippi State University

Microstructural Evolution of Different Generations of Gamma Prime Precipitates in a Commercial Nickel Base Superalloy: Antariksh Singh¹; Soumya Nag¹; Gopal Viswanathan²; Jaimie Tiley²; Yunzhi Wang³; Hamish Fraser³; *Rajarshi Banerjee*¹; ¹University of North Texas; ²Air Force Research Laboratory; ³Ohio State University

Microstructure Engineering of the Heat Affected Zone in Linepipe Steels: *Fateh Fazeli*¹; Mehran Maalekian¹; Morteza Toloui¹; Matthias Militzer¹; Warren Poole¹; ¹The University of British Columbia

Microstructure Evolution in Titanium Alloy: A Phase-Field Study: *Tae Wook Heo*¹; Saswata Bhattacharya¹; Donald Shih²; Long-Qing Chen¹; ¹The Pennsylvania State University; ²Boeing Research & Technology

More Efficient ICME through Materials Informatics and Process Modeling: *Gautham Basavarsu*¹; Ravi Kumar¹; Shakti Bothra²; Goutam Mohapatra¹; Nagesh Kulkarni¹; K A Padmanabhan³; ¹TRDDC; ²IIT Bombay; ³University of Hyderabad

Multi-Attribute Integrated Forming-Crush Simulation Optimization Using Internal State Variable Model: *Ali Najafi*¹; Masoud Rais-Rohani¹; Youssef Hammi¹; ¹Mississippi State University

Multiscale Modeling of Polycrystalline Magnetostrictive Alloy Galfenol: Microstructural Model: *Veera Sundararaghavan*¹; ¹University of Michigan

Non-Destructive High Energy X-Ray Diffraction Microscopy Studies of Bulk Polycrystal Responses: Shiu Fai Li¹; Chris Hefferan¹; *Jonathan Lind*¹; Reeru Pokharel¹; Anthony Rollett¹; Ulrich Lienert¹; Robert Suter¹; ¹Carnegie Mellon University

Numerical Evaluation of Energy Transfer during Surface Mechanical Attrition Treatment Process: *Xiaochun Zhang*¹; Jian Lu²; San-Qiang Shi¹; ¹The Hong Kong Polytechnic University; ²City University of Hong Kong

Phase-Field Modeling of Microstructure Evolution for Ni-Base Superalloys during Thermo-Mechanical Processes: *Kunok Chang*¹; Yoon Suk Choi²; Triplicane Parthasarathy²; Long-Qing Chen¹; ¹Penn State; ²UES Inc.

Phase-Field Simulation and Experimental Study of Precipitates in an Al-Si-Mg Alloy: *Zhiqiang Gao*¹; Qigui Wang²; ¹Southeast University; ²GM Global Powertrain Engineering

Phase-Field Simulation of Columnar and Equiaxed Growth of Dendrites during Multiphase Solidification of Alloys: *Lifei Du*¹; Saswata Bhattacharya¹; Qigui Wang²; Rong Zhang³; Long-Qing Chen¹; ¹Department of Materials Science and Engineering, Penn State University; ²Global Powertrain Engineering, General Motors Company; ³Department of Applied Physics, Northwestern Polytechnical University

Precipitation Kinetics Modeling, Implementation and Applications for Multi-Component Alloys: *Qing Chen*¹; Heng-Jeng Jou²; ¹Thermo-Calc Software AB; ²QuesTek Innovations LLC

Prediction of Microstructure and Mechanical Properties in Aluminum Castings after Heat Treatment: *Jianzheng Guo*¹; Weisheng Cao²; Sam Scott³; Mark Samonds¹; ¹ESI US R&D; ²ComputhermTherm LLC; ³ESI Group NA

Thermodynamic Database for Mg Alloy Systems: *Libin Liu*¹; ¹Central South University

Toward a Virtual Platform for Materials Processing: *Georg Schmitz*¹; Ulrich Prah²; ¹Access RWTH Aachen; ²RWTH Aachen University

Success Stories

Thursday AM
July 14, 2011

Room: Exhibit Hall
Location: Seven Springs Mountain Resort

8:15 AM Keynote

ICME Success Stories: *David Furrer*¹; ¹Pratt & Whitney

8:50 AM Discussion

9:00 AM

ICME Success at Timken – The Virtual Fatigue Life Test: *Patrick Anderson*¹; *Xiaolan Ai*¹; *Peter Glaws*¹; *Krich Sawamiphakdi*¹; ¹The Timken Company

9:25 AM

Development of ICME Tools for the Prediction of Automotive Transmission Gear Distortion during Heat Treatment: *Mei Li*¹; *Xuming Su*¹; *Junsheng Wang*¹; *Junchin Yang*¹; *Ron Lucas*¹; *William Dowling*¹; ¹Ford Motor Company

9:50 AM

Advances in Computational Tools for Virtual Casting of Aluminum Components: *Qigui Wang*¹; *Peggy Jones*¹; *Yucong Wang*¹; *Dale Gerard*¹; ¹General Motors

10:15 AM Discussion

Discussion Leader: **William Joost, DOE**

10:30 AM Break

10:50 AM

Accelerating Insertion of Materials at GE Aviation: *Shesh Srivatsa*¹; *Arturo Acosta*¹; *Daniel Wei*¹; *Liang Jiang*¹; *Deborah Whitis*¹; *Eric Huron*¹; ¹General Electric Company

11:15 AM

Modelling the Process Chain of Microalloyed Case Hardening Steel for Energy Efficient High Temperature Carburising: *Ulrich Prahl*¹; *Sergey Konovalov*¹; *Thomas Henke*¹; *Stefan Benke*¹; *Markus Bambach*¹; *Georg Schmitz*¹; ¹RWTH Aachen University

11:40 AM

From Concept to Flight: An Example of Computational Design and Qualification for Aerospace Structural Alloys: *Charles Kuehmann*¹; *Herng-Jeng Jou*¹; *Chris Kern*¹; ¹QuesTek Innovations LLC

12:05 PM Discussion

Discussion Leader: **Paul Ret, Air Force Research Laboratory**

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- Solid-State Interfaces II: Toward an Atomistic-Scale Understanding of Structure, Properties, and Behavior through Theory and Experiment
- Stochastic Methods in Materials Research
- Ultrasonic Fatigue of Advanced Materials and Systems

SCHEDULE OF EVENTS

Sunday, July 10

Registration	5 to 9 p.m.	Stag Pass Area
Keynote Speaker	8 to 8:45 p.m.	Convention Hall
Welcoming Reception, <i>Sponsored by UES, Inc.</i>	9 p.m. to midnight	Convention Hall

Monday, July 11

Registration	7:30 a.m. to 1 p.m., 5 to 6:30 p.m.	Stag Pass Area
Congress Welcome and Opening Keynote Session	8:15 to 8:45 a.m.	Exhibit Hall
Modeling Processing-Microstructure Relationships I	8:45 a.m. to 1 p.m.	Exhibit Hall
Volleyball Game: Modelers vs. Experimentalists	3 to 5 p.m.	Seven Springs Volleyball Area
Modeling Processing-Microstructure Relationships II	6:15 to 9:50 p.m.	Exhibit Hall
Poster Reception I	9:50 p.m. to 12:30 a.m.	Exhibit Hall

Tuesday, July 12

Registration	8 a.m. to 6 p.m.	Stag Pass Area
Modeling Microstructure-Property Relationships I	8:15 a.m. to 12:20 p.m.	Exhibit Hall
Conference Barbecue	6 to 8 p.m.	Ski Lodge Deck
Amateur Hour & Bonfire	8 to 9 p.m.	Adjacent to the Lodge
Modeling Microstructure-Property Relationships II	1:45 to 5:50 p.m.	Exhibit Hall
Social	9:30 p.m. to 12:30 a.m.	Lodge

Wednesday, July 13

Registration	8 a.m. to 12:30 p.m., 4 to 6:30 p.m.	Stag Pass Area
ICME in Education	8:30 a.m. to 12:35 p.m.	Exhibit Hall
Conference Banquet	4:30 to 6:15 p.m.	Convention Hall
Information Infrastructure	6:15 to 10:15 p.m.	Exhibit Hall
Poster Reception II	10 p.m. to 12:30 a.m.	Exhibit Hall

Thursday, July 14

Registration	7:30 a.m. to noon	Stag Pass Area
Success Stories	8:15 a.m. to 12:20 p.m.	Exhibit Hall

***Please note:** Exhibit runs concurrent with the technical sessions in the Exhibit Hall