ASME Journal of Nanotechnology in Engineering and Medicine
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Call for Papers

Special Topic on: **Computational Modeling of Nanoscale Grain Growth of Polycrystalline Materials**

Increased control of material microstructure to enhance mechanical and physical properties continues to be an active area of research. Occupying a central role in this effort has been the ability to control grain growth in polycrystalline materials. Complementing experimental research, recent computational efforts in this active research area have provided a wealth of new insights and prompted new avenues for additional research. A number of computational methods at the intermediate (mesoscale) have been employed in recent years, including the front-tracking model, the Q-State Monte Carlo model, and the phase field model. However, very little has been conducted at the nanoscale.

The main focus of this special issue is on computational modeling of polycrystalline materials using novel methods at the nanoscale. Articles submitted to this special issue can also be concerned with mesoscale modeling of polycrystalline materials, but these submissions should focus on novel applications, including models relating to; the addition of secondary phases, the effect of external thermal gradients, etc. Potential topics include (but not limited to):

- Simulating Grain Boundary Diffusion at the Nanoscale
- Nanoscale Simulations of Grain Growth
- Uncertainty and Error Analysis Applied to Existing Methods
- Nanoscale Characterization of Grain Size and Grain Boundary Energies
- Multiscale (Nano/Meso) Simulations of Grain Growth
- Other Closely Related Topics

Submission Instructions, Timeline and Review Process:

1. Manuscripts must be prepared according to the Journal’s guidelines: [http://journaltool.asme.org/Content/AuthorResources.cfm](http://journaltool.asme.org/Content/AuthorResources.cfm)
2. Please select the special topic under ‘Nanoscale Grain Growth’ when submitting the manuscript
3. Submit your manuscript online at the ASME Journal Tool website: [http://journaltool.asme.org/Content/index.cfm](http://journaltool.asme.org/Content/index.cfm)
4. All manuscripts submitted for this special topic will be subjected to a peer review to ensure a high quality standard. Please indicate in your cover letter that the submitted manuscript has not been published previously, is not under review by any other journal, and will not be submitted elsewhere before a final decision is made by JNEM.
5. Important Dates:
   a. Paper submission by: May 1, 2016
   b. Author notification by: July 1, 2016,
   c. Publication of Special Topic: September 2016

Guest Editor

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Dr. Allen is a Research Mechanical Engineer and Senior Principal Investigator at the Information Technology Laboratory, Engineer Research and Development Center. He holds a PhD in Mechanical Engineering from Utah State University, as well as degrees in Aerospace Engineering and Mathematics. Dr. Allen has worked for various Department of Defense installations wherein he has developed broad experience as a computational materials researcher. His research interests include high performance computational modeling of multiphysics and multiscale materials systems.