

TMS 2011

140th Annual Meeting & Exhibition

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Physical and Mechanical Metallurgy of Shape Memory Alloys for Actuator Applications

Sponsored by

TMS Structural Materials Division (SMD)

TMS/ASM: Mechanical Behavior of Materials Committee

Scope

While shape memory alloys (SMA) have been around for several decades, new opportunities and applications have emerged for SMA-based actuators, especially in the aerospace, automotive, oil and gas industries, which has resulted in a significant change in the philosophy of materials development, engineering and design. In this regard, the effects of variables, such as composition, magnetic fields, microstructure, specimen shape, stress and temperature cycles and processing on important SMA properties (e.g. transformation strain, work output, transformation temperatures, recoverable and irrecoverable strains) are critical to an insightful understanding of their behavior as actuator materials. In addition, the development of new high-temperature shape memory alloys (HTSMA) and advanced magnetic shape memory alloys require considerable detailed characterization of their properties to suitably qualify them for actuator applications. The proposed symposium will provide a forum for experts to discuss these issues with an emphasis on the relevant metallurgical properties of these alloys. The scope of the conference will include alloy development, processing, characterization, application of SMAs and theoretical models describing their behavior.

Six technical sessions are planned on the following topics: (a) Crystallography and microstructures; (b) deformation behavior; (c) multiscale modeling; (d) processing and alloy development; (e) applications.

Organizers

S. V. Raj, NASA Glenn Research Center, United States

Raj Vaidyanathan, University of Central Florida, United States

Ibrahim Karaman, Texas A&M University, United States

Ronald D. Noebe, NASA Glenn Research Center, United States

Frederick T. Calkins, The Boeing Company, United States

Shuichi Miyazaki, Institute of Materials Science, University of Tsukuba, Japan

To submit an abstract:

Abstracts must be submitted by July 15, 2010 via ProgramMaster featured on the [TMS 2011 home page](#).
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