

Connecting the global minerals, metals, and materials community.



Plan Now to Attend:

Additive Manufacturing: Interrelationships of Fabrication, Constitutive Relationships Targeting Performance, and Feedback to Process Control

This symposium will focus on the mechanical performance of additively manufactured materials. Particular emphasis is placed on developing methodologies that utilize modeling/advanced diagnostics for certifying performance during fabrication. Studies that compare additively manufactured vs. traditionally manufactured parts in terms of both microstructure and mechanical behavior are welcome. In addition, work focused on the standardization of additively manufactured materials properties and qualification is of interest.

This symposium will serve as a venue for the international additive manufacturing community—including government, academia, and industry—to define the fundamental interrelationships between feedstock, processing, microstructure, shape, mechanical behavior/materials properties, and function/performance.

Areas of interest include, but are not limited to:

- Fabrication
- Processing: feedstock material (including powder, wire, and filament), process and process monitoring (both freeform and direct write), build parameters, repair parameters, post processing (e.g., heat treatment)
- Specimen Design: net-shaped parts; parts machined to shape based on scaling; as built laboratory test specimens/coupons; specimens/coupons machined from larger builds
- Developing Constitutive Relationships: coupling microstructure measurements and experimental stress analysis to characterize mechanical behavior/materials properties targeting performance
- Closing the Feedback Loop: microstructure measurements feedback to fabrication; performance (mechanical behavior, materials properties, and/or functional) feedback to fabrication

Sponsored by:

- TMS Materials Processing & Manufacturing Division; TMS Structural Materials Division
- Powder Materials Committee

Organized by:

John Carpenter, Los Alamos National Laboratory (USA)
David L. Bourell, University of Texas at Austin (USA)
Reginald F. Hamilton, Pennsylvania State University (USA)
James W. Sears, GE Global Research Center (USA)
Allison M. Beese, Pennsylvania State University (USA)
Rajiv S. Mishra, University of North Texas (USA)

**For more information on how
to participate, visit:**

www.tms.org/TMS2015

Questions? Contact programming@tms.org