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TMS 2020

149th Annual Meeting & Exhibition

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Advanced Materials

Bulk Metallic Glasses XVII

The goal of this symposium is to provide fundamental understanding and theoretical modeling of processing and mechanical behavior of bulk metallic glasses (BMGs).

In the last decade, new approaches to fabricating metallic glasses [i.e., by utilizing unique combinations of elements to form metallic-glass alloys] have resulted in the required cooling rate dropping from 105 C/s to as low as 1 C/s, and the specimen size increasing from 0.05 mm to as large as 80 mm. Because of the large sizes possible with this exciting technology, the metallic glasses are called BMGs.

Mechanical behavior of BMGs is among the new, exciting fields of research that are fully illustrating their advantages over crystalline alloys. Generally, BMGs have higher fracture strengths, fracture toughnesses, and elasticities than their crystalline counterparts. There is great interest in BMGs for use in biomedical, structural, and mechanical applications.

Some of the areas to be explored include:
- Material fabrication and processing
- Nanocrystalline materials and composites
- Mechanical behavior
- Shear band formation, fatigue, deformation, and fracture mechanisms
- Corrosion, physical, magnetic, electric, thermal, and biomedical behavior
- Theoretical modeling and simulation
- Industrial applications

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Abstract Deadline is July 1, 2019. Submit online at
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