

Special Issue

Metallic Glasses: Pathways to Viable Applications

Message from the Guest Editor

Metallic glasses (often referred to as glassy alloys or amorphous alloys) were first widely studied in the 1960s, because they possess both desirable properties of conventional crystalline metals and the formability of conventional oxide glasses. Over the past 20 years there have been a number of attempts to commercialize bulk metallic glasses. Metallic glasses are still a subject of intensive research in the international metals community. From an application perspective, it is clear that metallic glasses have an interesting combination of properties such as very high strength, very high hardness, large elastic elongation limit, potential for high fracture toughness, and superior corrosion resistance. However, to obtain viable industrial applications we need an alloy is harder and stronger than and is at least as tough as stainless steels, with similar costs. In this Special Issue, we hope to deepen understanding of why metallic glasses attract such intensive interest, as well as highlight some challenging issues awaiting resolution to provide viable paths to more active applications of metallic glasses.

Guest Editor

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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