

Special Issue

Recent Advances in Metallic Glass Composites

Message from the Guest Editors

Metallic glasses (MGs) possess an amorphous atomic structure and a unique combination of mechanical properties, that is, high yield strength, large elastic limit, and low elastic modulus. Several studies have shown that the addition of particles to MGs greatly improves their deformation behavior, resulting in metallic glass composites (MGCs) with increased ductility. This ductility enhancement depends on the nature, shape, size, and volume fraction of the reinforcing particles, while the deformation behavior of MGCs is dictated by the nature of the matrix–particle interaction. Despite the large number of studies on the plastic behavior of MGCs, little is known about the underlying atomistic deformation mechanisms. Similarly, the corrosion and tribology behavior of these composites is still poorly understood, and the search for novel processing routes and of MGC systems is ongoing. This Special Issue will welcome theoretical, computational and experimental contributions expanding our current understanding of metallic glass composites.

Guest Editors

Prof. Dr. Alejandro Zúñiga

Center of Engineering, Modeling and Applied Social Sciences, Federal University of ABC, Santo André 09210-580, Brazil

Prof. Dr. Roberto G. A. Veiga

Center of Engineering, Modeling and Applied Social Sciences, Federal University of ABC, Santo André 09210-580, Brazil

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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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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Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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