Special Issue

Damping in Metals and Alloys

Message from the Guest Editor

Damping is a property of materials that is useful in a range of technological applications, from large structures, as in the case of seismic damping, through macroscopic-scale damping in daily life for noise suppression and vibration mitigation, to microscopic-scale damping to, for example, improve MEMS reliability. In addition, the microscopic processes that are responsible for damping are the subject of high scientific interest. They involve many kinds of relaxation processes, and are associated, among other things, with short-distance diffusion of atoms and interface movement. The study of these microscopic mechanisms and their contribution to damping may require the development of non-conventional instrumentation or methodologies to measure the internal friction. Finally, mechanical spectroscopy for the measurement of damping, as an intrinsic property of materials, may become a tool to discover and analyze new phenomena in materials science, providing specific information that no other technique is able to offer. All these aspects of damping will be addressed in the present Special Issue, which will be focused on "Damping in Metals and Alloys".

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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