

Special Issue

Magnetic Properties Analysis of Amorphous and Partially Crystallized Alloys—2nd Edition

Message from the Guest Editor

Amorphous magnetic materials have long-range, disordered atomic structures, being described as either ferromagnetic, loose ferromagnetic, ferromagnetic, or loose ferromagnetic. They have been rapidly developed globally as new types of magnetic material since the 1970s. As an energy-efficient and environmentally friendly technique, the magnetic refrigeration technique, based on the magneto-caloric effect (MCE) of the materials, is regarded as a promising alternative to conventional vapor-cycle refrigeration technology. Magneto-caloric materials are usually divided into two types. Materials that undergo a first-order magnetic transition, including most of the crystalline variety, exhibit a sharp but narrow magnetic entropy change peak ($-\Delta S_{\text{mpeak}}$). In contrast, materials that undergo a second-order magnetic transition, including amorphous alloys and a small amount of crystalline alloys, show a broadened but low magnetic entropy change peak, and this results in high RC. Research areas may include, but should not be limited to, the issue of magnetic refrigeration materials.

Guest Editor

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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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