Special Issue

Microstructure and Properties of Intermetallic Alloys

Message from the Guest Editor

Intermetallics are a special group of metallic materials whose properties allow their use under conditions in which conventional metallic materials fail; these conditions include high temperatures, aggressive corrosive environments, and extreme abrasive and adhesive stresses. Many intermetallic compounds show very good physical and mechanical properties, specifically very good thermal stability, high melting points, good corrosion resistance, and low density, which makes them suitable candidates for high-temperature applications. However, these materials show limited ductility and higher brittleness, especially at low temperatures, which is an obstacle to their wider use. The use of materials based on intermediate compounds is very diverse, but it is always necessary to consider the choice of a particular material in terms of its physical or mechanical properties. They are used, for example, as construction materials, shape memory materials (NiTi), heating elements of electric resistance furnaces (MoSi2), magnetic alloys (Ni3Fe), hydrogen storage materials (Mg2Ni, LaNi5) or high-temperature materials (TiAl, NiAl), or for strongly oxidizing environments (FeAl).

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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Editor-in-Chief

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