Special Issue

Intermetallics: From Design to Structural and Properties

Message from the Guest Editors

Intermetallics are a special group of metallic materials whose properties allow 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 display excellent physical and mechanical properties, specifically very good thermal stability, high melting point, good corrosion resistance, and low density, making them suitable candidates for high-temperature applications. However, these materials show limited ductility and high brittleness, especially at low temperatures, which impedes 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).

Guest Editors

Dr. Anna Knaislová

Faculty of Mechanical Engineering, Jan Evangelista Purkyně University in Ústí nad Labem, Ústí nad Labem, Czech Republic

Dr. Pavel Novak

Department of Metals and Corrosion Engineering, University of Chemistry and Technology, Technická 5, 166 28 Prague, Czech Republic

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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