Special Issue

Experimental and Numerical Analysis of Metals and Alloys and Their Industrial Applications

Message from the Guest Editor

Engineering problems in different branches of mechanical and civil engineering design and technology require the use of powerful tools in everyday practice. Understanding the complex behavior of materials is crucial, including unusual loadings. Describing the constitutive properties of modern materials, which are employed under these demanding conditions, is not trivial and involves combining knowledge from laboratory tests, theoretical material modeling, and, finally, practical computations. This Special Issue will cover all three fields and focus attention on experimental tests, their interpretation, and theoretical modeling and numerical aspects of using these results in computations of metals and alloys. It is obvious, that using numerical methods in every analysis problem requires a proper constitutive relation. Therefore, correct and accurate constitutive relation is a key factor in applications to computer codes. Metals and alloys are still the principal structural materials in some branches of industry. In recent decades, however, many new alloys have been introduced in a variety of manufacturing industries, including automotive and aerospace.

Guest Editor

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Message from the Editor-in-Chief

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.

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