

Special Issue

Alloys for High-Temperature Applications

Message from the Guest Editor

High-temperature resistance is essential in many applications. The materials and alloys used for high-temperature components require a tailored combination of mechanical strength, microstructural stability and corrosion/oxidation resistance. Turbine blades, heat-exchangers, fuel nozzles, newer turbocharged engines are subjected to high tensile loads and pressures, as well as corrosive environments, all of which occurring under thermal fatigue conditions. Operating at higher efficiency is often a key issue in order to achieve fuel economy, reduction in greenhouse gas emissions, and improved vehicle performance too. The requirement of higher operating temperatures is almost mandatory for higher efficiency. This challenge will drive to continuously improve the traditional materials and develop new alloys before brittle non-metallic materials, such as oxide systems, can be thought and applied. The aim of this Special Issue is to collect full papers, communications, and reviews highlighting original and recent innovations about metals, alloys and composite materials for high-temperature applications.

Guest Editor

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Deadline for manuscript submissions

closed (31 December 2018)



Metals

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Impact Factor 2.5
CiteScore 5.3



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About the Journal

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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