Special Issue

Mechanical Properties and Strengthening Mechanism of New Superalloys

Message from the Guest Editors

The Special Issue is mainly concerned with the study of the mechanism of strength and toughness of new superalloys. The new superalloys refer to the realization of solid solution strengthening, precipitation strengthening, dislocation strengthening, micro-twins strengthening, and other excellent strengthening effects through precision smelting, forging, and heat treatment processes, so that the material can still maintain stable mechanical properties under high temperature and high pressure. At the same time, it also has excellent high-temperature oxidation resistance and thermal corrosion resistance, as well as good fatigue performance, fracture toughness, and other comprehensive properties of materials to meet the increasingly demanding requirements of energy and power systems. The SI will cover, but is not limited to, the following topics:
Design, preparation, and application of high-temperature and high-strength alloys used above 700 ;
Reasonable matching and comprehensive control of strength and toughness of new superalloys;
Mechanism of resistance to high-temperature oxidation and corrosion;

We invite you to submit a manuscript for this SI.

Guest Editors

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Deadline for manuscript submissions

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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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