Special Issue

Microstructure and Mechanics of Metallic Materials

Message from the Guest Editor

With concrete, metallic alloys are the main family of materials used for structural applications (cars, airplanes, trains, etc.). The main requirements for the development of metallic alloys are strength, ductility, and density in order to lighten the structures as much as possible to reduce the CO2 emission. This is why microstructural design (refinement, precipitation hardening, multiphase alloys, etc.) is crucial to provide guidelines for new alloy developments. Simultaneously, new microstructures are becoming more and more complicated, characterization must be performed at a very fine scale. Thus, a lot of devices have been developed and applied (FEG-SEM, TEM, SANS, atom probe, etc.). This Special Issue will serve as a crossroads from physical metallurgy to mechanics, taking into account Al-Li alloys, new intermetallics, Twining-induced plasticity in steel, high entropy alloys, etc.

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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