Special Issue

Microstructure and Mechanical Properties of Structural Steels and Alloys

Message from the Guest Editors

The mechanical properties of metallic materials depend significantly on their microstructures, including crystallographic and metallographic textures, phase content and particle distribution, dislocation substructure and internal stresses, etc. Therefore, studies on structure–property relationships are of great practical importance. The development of structural steels and alloys with favorable mechanical properties requires comprehensive investigation of regularities of microstructure evolution as a function of chemical composition during material processing/manufacturing and various post-processing treatments.

The aim of this Special Issue is to collect the hottest achievements in theoretical and experimental investigations of microstructures and their effect on mechanical properties of various metallic materials, focusing on frontiers in processing and characterization of structural steels and alloys. Papers dealing with experimental investigation, simulation, and analysis of structure–property relationships in structural steels and alloys during exploitation are also welcome.

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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.

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