Special Issue

Microstructure and Mechanical Behaviour of Alloys

Message from the Guest Editor

Steels are the most frequently used metallic materials, and numerous novel steels have received extensive attention. According to their shapes, sizes, and applications, steels can be produced by various processing techniques, such as casting, rolling, forging, welding, machining, powder metallurgy, and additive manufacturing. However, increasing the hardness/strength of steels by modifying the processing parameters or by adding alloying elements mostly impairs the ductility or toughness, and vice versa. This is the biggest challenge in developing a new type of steel with excellent combinations of various mechanical performances. Moreover, a light-weight steel or a steel with an outstanding strength–ductility combination can reduce energy consumption and material usage.

This Special Issue aims to cover recent advances and developments in the microstructure and mechanical behaviours of steels and the latest processing–microstructure–mechanical properties relationships.

Guest Editor

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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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