Special Issue

Mechanical Behavior of Metals and Alloys: Modelling, Characterization and Relationship with Microstructure

Message from the Guest Editor

Economic issues and environmental concerns require high performances from materials. The designer needs a deep knowledge of the materials being used to fully exploit their properties, avoiding both unsafe undersizing and inefficient oversizing. Laboratory testing usually provides this information, but sometimes it is hard – or even impossible – to mimic the actual working conditions. Therefore, a thorough understanding of the materials' behavior is much needed, to predict how the material will perform once in service. Modeling is a tool that can accomplish this task. However, to be accurately predictive, the modeling of structural materials needs to be paired with adequate microstructural analysis, since the microstructure is ultimately responsible for the material performance. This Special Issue will focus on the description of the mechanical behavior of metallic materials, and its relationship with microstructure.

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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