Special Issue

High Performance Copper Alloy

Message from the Guest Editor

High-perfomance copper alloys have attracted much attention because of their high mechanical strength, excellent electrical conductivity, and good fatigue properties as well as thermal stability, and include Cu-Cr-Zr alloys, Cu-Ni-Si alloys, Cu-Ag alloys, Cu-Mg alloys, Cu-Al2O3 composites, and Cu-W composites. High-perfomance copper alloys have been widely used in the fields of integrated circuit lead frames, resistance welding electrodes, vacuum contact switches, casting molds, high-speed rail transit, and thrust chambers of rocket engines. It is important to improve existing copper alloys and develop novel copper alloys, including enhancing mechanical properties with comparable thermal or electrical properties in addition to improving high-temperature creep properties and high-temperature softening resistance. For oxide dispersion copper composites, it is necessary to explore production processes with a large size, high efficiency, and low costs.

Guest Editor

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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