

Special Issue

Advances in Recrystallization of Metallic Materials

Message from the Guest Editor

Recrystallization (RX) is a key driver behind microstructure evolution in crystalline materials. RX can be defined as the formation of a new grain structure in a cold-worked material and occurs through the formation and migration of mobile grain boundaries. On macroscopic scale, RX can take place during materials processing under static or dynamic conditions in conjunction with concurrent deformation of the material. Important parameters include the temperature, deformation and deformation rate. On micro-/mesoscopic scale, RX is intimately linked to the properties of grain boundaries, crystallographic texture, grain morphologies, evolution of dislocation structures and a range of other processes and features of the crystal aggregate.

The Special Issue welcomes, but is not limited to, studies on: thermo-mechanical materials processing; exploitation in materials design; observation and characterization of the processing-microstructure-property links and their dependence; nucleation mechanisms; influence of grain boundary structure; grain boundary properties; texture influence and evolution; numerical models; multiscale approaches in modelling and simulation, which are related to RX.

Guest Editor

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About the Journal

Message from the Editorial Board

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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