Special Issue

Modelling the Deformation, Recrystallization and Microstructure-Related Properties in Metals

Message from the Guest Editor

Experimental investigations of the thermomechanical processing (TMP) of metals clearly demonstrates that technological process tuning parameters have a great influence on both the microstructure and texture evolution. The mesoscopic transformations of polycrystalline aggregates, involving microstructural and crystallographic changes on the grain level, can be interpreted by a vast body of modelling approaches developed. Advances in modelling have created a solid platform for understanding the evolution of microstructural features in polycrystalline systems during particular processing step and assist in revealing the behavior of materials under specific circumstances. In this Special Issue, we intend to provide a wide spectrum of articles dealing with modelling of microstructural aspects involved in deformation and recrystallization as well as simulation of microstructure-based or texture-based properties in various metals. The latest advances in the theoretical interpretation of mesoscopic transformations based on experimental observations are welcome. The studies dealing with the modelling of structure-property relationships are of particular interest.

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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