



Processing Impact on Functional Metals

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Message from the Guest Editors

Functional metals and alloys are smart materials which excel in characteristics that go beyond exhibiting a distinct structural performance. Their peculiar features can consist, among others, of superelasticity or a shape memory effect, particular magnetic behavior, biodegradability, heat or electrical conductivity, damping behavior, hydrogen storage capacity, and many more. Using conventional preparation techniques, designing alloys often requires a trade-off between guaranteeing sufficient integrity and excellent performance concerning their physical features of interest. The selection of the fabrication technique does not solely concern productivity, but the preparation and processing impact also on the material properties in terms of homogeneity, impurity content, grain size and distribution, anisotropy, presence of secondary phases, and residual stresses. This Special Issue looks for articles on functional metals and alloys that consider the effects of the synthetization and processing method on the final material or device properties. Additionally, review papers that highlight the process–material property relationship will be considered.





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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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