

Special Issue

Embrittlement and Ductility of Metallic Structural Materials

Message from the Guest Editors

The embrittlement of metallic materials may be divided into non-hardening embrittlement and hardening embrittlement. Non-hardening embrittlement is usually caused by grain boundary segregation of some impurity elements. Hardening embrittlement is induced by material strengthening. In most cases, the embrittlement is always accompanied by the deterioration of ductility for metallic structural materials, which could cause difficulties in some manufacturing processes. Besides, poor ductility could cause engineering disasters during the service of structural components. Therefore, embrittlement and ductility are always hot topics in the field of metallic structural materials. This Special Issue will focus on investigations into brittleness and ductility in all types of metallic structural materials. Manuscripts regarding the following areas will be preferentially considered in the Special Issue: precipitation embrittlement; irradiation embrittlement; embrittlement under welding and joining; grain boundary segregation; hot ductility; mechanism or method of strengthening and toughening; and modelling or simulation of embrittlement or ductility.

Guest Editors

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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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