



Fracture Mechanism and Fatigue Behaviour of Metallic Materials

Guest Editor:

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Message from the Guest Editor

In recent decades, significant progress has been made in the understanding of the fracture mechanism and fatigue behavior of metallic materials. Recent developments in constraint-based fracture mechanics have enabled laboratory testing to better predict the fracture properties of actual full-scale engineering structures. On the other hand, progress in the understanding of the welding residual stresses, material inhomogeneity and complex geometries in welded joints have improved the modelling capacity of fatigue behaviors in welded structures. However, the structural integrity requirements for engineering structural components provide continuous challenges in the further investigation of the constraint effects on fracture mechanisms, as well as the fatigue behaviors of welded joints.

The aim of this Special Issue is to provide a collection of recent papers on experimental, computational and theoretical progress in fracture mechanism, and the fatigue behaviour of metallic materials, with a special focus on:

- Fracture mechanism of metals accounting for constraint effects;
- Fatigue behaviors of welded structures.





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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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