Special Issue

Residual Stress and Fatigue of Metals

Message from the Guest Editors

Nowadays, metal is one of the fundamental pillars of social progress, as well as the material basis of national economic development. Many mechanical components and structures are made of metal materials. During the fabrication of this metal components, the residual stresses are inevitably generated, which has a great influence on the structural integrity and service performance of the products. Whether it is traditional welding/joining/forming technology or newly developed additive manufacturing technology, the residual stress has always been a key factor affecting the reliability of mechanical structures. Fatigue is the main failure mode of the mechanical components and structures. Many failure experiences show that the location of fatigue failure is closely related to the distribution and magnitude of residual stress. Therefore, the investigation on the residual stress, fatigue and the relationship between them is of great significance to ensure the long life and safe operation of metal structures. The goal of the present Special Issue is to examine the recent contributions in the field of residual stress and fatigue of metals.

Guest Editors

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Deadline for manuscript submissions

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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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