

Special Issue

Constitutive Modeling of Metallic Materials

Message from the Guest Editors

Modeling and simulation to predict the behavior of metallic materials play a central role in fast and cost-effective development of materials. Behind these means to predict the behavior of the materials are constitutive models. In particular, constitutive models that describe the mechanical responses of metallic structural materials, involving deformation and plasticity, have been the subject of intense research due to wide ranging engineering applications, such as in automotive, aerospace, military, and energy industries. Moreover, with the recent surge of interest in artificial intelligence, there has been significant progress in methods of enhancing the performance of constitutive models by identifying and calibrating constitutive model parameters, as well as quantifying and handling uncertainties, in constitutive models. In this Special Issue, we invite a wide range of articles that relate to constitutive models. We welcome reviews and articles that focus on novel constitutive models, applications of existing constitutive models, and methods that enhance the performance of constitutive models.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

Prof. Dr. Yong Zhang

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