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Fracture and Damage Mechanics of Metals, Steels and Alloys

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Deadline for manuscript submissions:
closed (31 January 2022)

Message from the Guest Editor

In recent years, modeling and simulation has increasingly become a primary tool to assess the structural integrity of mechanical components. To improve design-against-failure assessment routes, physically based models capable of accounting for different micromechanisms of damage and with clear material parameter identification procedures are needed. The present Special Issue invites papers to update the state-of-the-art of this relevant topic. Both review and original manuscripts are welcome. Special attention will be dedicated to the application to thermomechanical processes and in-service conditions characterized by extreme temperatures (low and high), large plastic deformation, high strain rates, and impact-related phenomena. Contributions demonstrating the applicability of damage models, where appropriate integrated with a more classical fracture mechanics approach, to practical application examples are also welcome.

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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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