



Fatigue Design and Defects in Metals and Alloys

Guest Editors:

Prof. Dr. Vigilio Fontanari

Department of Industrial
Engineering, University of Trento,
Trento, Italy

Prof. Dr. Matteo Benedetti

Department of Industrial
Engineering, University of Trento,
Trento, Italy

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Message from the Guest Editors

For this Special Issue, we are inviting recent advances in the fatigue of metals and components with a special emphasis on the influence of different types of defects, from micro to macro scales, in the different fatigue regimes and on the methods developed to account for them in the design of components. Experimental, theoretical and numerical studies aimed at incorporating the research outcomes into design approaches for the fatigue assessment of structural components and mechanical parts are welcomed.

The effort to correctly understand and account for the detrimental influence of defects in the design of components undergoing in service to complex periodic loading characterizes the major part of the history of metal fatigue. The reduction of the defect's criticality, as well as the ability to account for their presence to predict the fatigue properties and service life of components, represent key factors for the successful application of any manufacturing process, from mature (e.g., casting) to emerging technologies (e.g., additive manufacturing).





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Editors-in-Chief

Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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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Contact Us

Metals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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