Special Issue

Structural Integrity and Failure Assessments in Metals and Alloys

Message from the Guest Editors

Since the beginning of the human civilization the failure analysis is a driving force for improving the strength of all materials used in the constructions and tools. Nowadays, the structural integrity and failure analysis have become an even more important research field combining modeling, materials characterization, microstructural analysis, stress analysis, and design factors that can all be involved in failure and integrity assessments. This Special Issue on “Structural Integrity and Failure Analysis in Metals and Alloys” intends to collect the recent developments, technical reports and case studies in the field. Original manuscripts, technical papers and reviews on all aspects of failures and integrity assessment, including modeling of failures, microstructural analysis, environmental degradations, high temperature failures, corrosion-related damages, and lifetime prediction are welcome. The Special Issue is oriented not only to researchers from universities and industrial research centers but also to the organizations directly involved in the production and product development.

Guest Editors

Prof. Dr. Roumen Petrov

Department of Electromechanical, Systems and Metal Engineering, Ghent University, B-9052 Ghent, Belgium

Dr. Abbas Bahrami

Materials Engineering Department, Isfahan University of Technology, Isfahan, Iran

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
metals@mdpi.com

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About the Journal

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.

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

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

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