# Special Issue

# Mechanical Structures: Fatigue Behavior, FEM Modeling and Design Best Practices

# Message from the Guest Editors

As materials and structures are increasingly subjected to complex loading conditions, understanding their fatigue behavior and strain-rate properties is essential for ensuring long-term reliability and safety. Innovations in design practices and computational modeling, such as finite element modeling (FEM), have further highlighted the need for interdisciplinary research in this field. By integrating experimental data with advanced simulation techniques, engineers can optimize structural designs and develop innovative materials and production technologies for a wide range of applications. In this context, we are pleased to announce a Special Issue on Mechanical Structures: Fatigue Behavior, FEM Modeling and Design Best Practices. This Special Issue will explore the latest advancements in research on innovative materials (such as functionally graded materials and metamaterials), design procedures, and numerical and analytical methodologies.

#### **Guest Editors**

Dr. Valerio Mangeruga

Prof. Dr. Matteo Giacopini

Dr. Saverio Giulio Barbieri

# Deadline for manuscript submissions

30 June 2025



# Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/219759

Applied Sciences MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 applsci@mdpi.com

mdpi.com/journal/ applsci





# Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



# **About the Journal**

# Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

### Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo

Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

### **Author Benefits**

## **Open Access:**

free for readers, with article processing charges (APC) paid by authors or their institutions.

### **High Visibility:**

indexed within Scopus, SCIE (Web of Science), Inspec, CAPlus / SciFinder, and other databases.

# Journal Rank:

JCR - Q1 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)

