

## Special Issue

# Fault Diagnosis and Fault Tolerant Control in Mechanical System

### Message from the Guest Editor

Fault diagnosis and fault-tolerant control (FTC) are pivotal for ensuring the safety, reliability, and operational continuity of modern mechanical systems under performance degradation or component failures. With the advent of Industry 4.0, these fields are experiencing revolutionary transformations through the integration of advanced sensing, artificial intelligence, and cyber-physical system architectures. The synergy of data-driven diagnostics and resilient control strategies enables mechanical systems to autonomously detect incipient faults, reconfigure control actions, and maintain operational integrity in critical applications—from aerospace propulsion to robotic manufacturing. This Special Issue aims to showcase pioneering research and practical innovations in fault diagnosis and FTC for mechanical systems. We invite contributions addressing the latest methodologies, theoretical breakthroughs, and industrial implementations. Topics of interest include, but are not limited to, the following: AI-enhanced fault identification, resilient control architectures, digital twin-enabled solutions, cross-domain fusion techniques.

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### Guest Editor

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### Deadline for manuscript submissions

31 August 2026



## Machines

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## About the Journal

### Message from the Editor-in-Chief

*Machines* is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.

Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.

There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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### Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso  
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