Special Issue

Green Fault Diagnosis: Energy-Efficient and Eco-Friendly Machinery Maintenance

Message from the Guest Editors

The global push toward sustainable manufacturing and carbon neutrality demands transformative approaches to machinery maintenance. This Special Issue focuses on green fault diagnosis (GFD)—a paradigm integrating cutting-edge technologies, energy-efficient strategies, and eco-friendly methodologies to achieve reliable, low-carbon machinery maintenance. Topics of interest include, but are not limited to, the following:

- Intelligent Monitoring and Predictive Maintenance
- AI, IoT, and digital twin applications for equipment state monitoring.
- Fault prediction and diagnosis using multi-sensor data fusion (vibration, temperature, pressure).
- Low-Power Sensing Technologies
- Energy-efficient sensor hardware design (e.g., ultra-low-power circuits, event-driven sensing).
- Self-powered sensors leveraging energy harvesting (vibration, thermal, solar).
- Low-Carbon Diagnostic Algorithms
- Lightweight AI models (e.g., pruned neural networks, quantized algorithms).
- Edge computing frameworks for decentralized data processing.
- Physics-informed machine learning to enhance model interpretability and efficiency.

Guest Editors

Dr. Ming Zeng

Dr. Haiyang Pan

Dr. Zhiyi He

Deadline for manuscript submissions

31 January 2026

Machines

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 4.7

mdpi.com/si/241555

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

mdpi.com/journal/machines

Machines

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 4.7

mdpi.com/journal/machines

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.

Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso
CISE - Electromechatronic Systems Research Centre, University of Beira Interior, Calçada Fonte do Lameiro, P-6201-001 Covilhã, Portugal

Author Benefits

High Visibility:

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

Journal Rank:

JCR - Q2 (Engineering, Mechanical) / CiteScore - Q1 (Control and Optimization)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.9 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).