Special Issue

Machine Learning for Condition Monitoring of Wind Energy Systems

Message from the Guest Editors

With the advent of machine learning (ML) and artificial intelligence (AI), there is unprecedented potential to transform condition monitoring, enabling real-time diagnostics, predictive maintenance, and anomaly detection in wind energy systems. This Special Issue invites researchers and practitioners to present recent advances and innovative applications of AI and ML techniques for the condition monitoring of wind energy systems. Topics of interest include, but are not limited to, the following:

- AI and ML models including deep learning, ensemble methods, and transfer learning for fault detection and diagnosis in wind farms.
- Predictive maintenance frameworks using AI and ML models to predict failures and optimize maintenance schedules.
- Novel approaches for identifying anomalous behavior in wind turbines, to prevent unexpected failures.
- Data fusion techniques for multiple sensors, such as vibration, temperature, acoustic, and SCADA.
- Explainability and interpretability of AI and ML models in condition monitoring.
- Applications of edge-based ML solutions for real-time condition monitoring in remote wind farms.
- Data challenges in condition monitoring.

Guest Editors

Prof. Dr. Mahmood Shafiee

School of Mechanical Engineering Sciences, University of Surrey, Guildford GU2 7XH, UK

Dr. Demetrio Cornilios Zachariadis

Department of Mechanical Engineering, Polytechnic School of the University of São Paulo, São Paulo, Brazil

Deadline for manuscript submissions

20 March 2026

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/225176

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

mdpi.com/journal/energies

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/journal/energies

About the Journal

Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, 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), Ei Compendex, RePEc, Inspec, CAPlus / SciFinder, and other databases.

Journal Rank:

CiteScore - Q1 (Control and Optimization)

MDPI