

Special Issue

Condition Monitoring and Reliability Enhancement of Electromechanical and Energy Systems

Message from the Guest Editor

This Special Issue addresses the critical role of electromechanical and energy systems in the global transition to sustainable, efficient technologies. As industries work to reduce emissions and enhance efficiency, ensuring the reliability of key components—from electric machines and power converters to energy storage systems—is more vital than ever. The integration of intermittent renewable sources and demanding operating conditions poses unique challenges for system stability and performance. Advanced condition monitoring and reliability strategies are essential to detect early degradation, prevent failures, and extend asset lifespan. We invite original research and reviews on topics such as sensors and instrumentation, digital twins, and AI-driven signal processing for early failure detection in power electronic converters, battery storage, hydrogen electrolyzers, fuel cells, power transformers, wind/PV systems, motors, drives, and robotics. Contributions leveraging artificial intelligence, digital twins, and smart sensing are especially encouraged to help improve reliability, reduce maintenance costs, and support sustainable, low-carbon energy infrastructure.

Guest Editor

Dr. Wilson Cesar Sant'Ana

Institute of Systems Engineering and Information Technology (IESTI),
Federal University of Itajuba (UNIFEI), Itajuba 37500-903, Brazil

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

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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.

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

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