Special Issue

Intelligent Fault Diagnosis and Control Optimization for Electric Machines

Message from the Guest Editors

This Special Issue, "Intelligent Fault Diagnosis and Control Optimization for Electric Machines," showcases cutting-edge research integrating AI and advanced control systems. It focuses on achieving new levels of autonomy, reliability, and efficiency for applications like electric vehicles, aircraft, and wind turbines. We explore novel AI paradigms, including deep learning, digital twins, and explainable AI, for next-generation solutions. Topics cover intelligent fault diagnosis and prognostics using advanced signal processing and methods for limited data scenarios. It also features AI-enhanced adaptive control, like reinforcement learning and model predictive control, for self-optimizing, fault-tolerant systems. Finally, we investigate synergistic, system-level approaches, including dynamic digital twins, edge computing, and experimental validations in industrial settings. Comprehensive case studies and experimental validations in industrial, automotive, and aerospace settings.

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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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