

# Special Issue

## Reliable Testing and Monitoring of Motor-Pump Drives

### Message from the Guest Editor

Pump units—comprising pumps, electric motors, and often frequency inverters—are used worldwide in water supply, HVAC, process engineering, industrial plants, energy systems, and mobile applications. Pumps consume about 10% of global electricity. Enhancing pump system efficiency can significantly reduce energy use and support sustainability through resource-saving designs and efficient operation. Reliable data on component and system condition and performance are essential during development, testing, and operation. Recent advances focus on:

- Machine learning for fault diagnosis
- Online condition monitoring
- Knowledge discovery from experimental data (KDED)
- Transient analysis
- Vibroacoustic tools
- Sensorless monitoring
- Smart sensors and IoT-based monitoring
- Accelerated degradation testing
- Efficiency evaluation of high-efficiency motors and drives
- Virtual prototyping and simulation
- Failure mode and effects analysis (FMEA)
- End-of-life (EOL) testing processes.

This Special Issue invites high-quality original contributions to advance research and dissemination via Open Access.

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### Guest Editor

Prof. Dr. Sven Urschel

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### Deadline for manuscript submissions

31 July 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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