# Special Issue

# Innovative Cooling and Thermal Management Solutions for Electrical Machines

## Message from the Guest Editor

Efficient cooling and thermal management solutions can regulate internal temperature and ensure optimal output efficiency, reliability, and service life. Currently employed in practical applications are primarily air and liquid cooling methods for cooling electrical machines. However, it is foreseeable that these single-phase heat transfer technologies will struggle to meet the increasing heat dissipation demands of electrical machines. Leveraging phase change heat transfer technologies involving vapor–liquid and solid–liquid transformations offer a promising solution for designing and developing new cooling structures and systems.

This Special Issue aims to present recent advances and technologies in the field of cooling and thermal management solutions for electrical machines. Topics include, but are not limited to:

- Electrical machines;
- Cooling and thermal management;
- Output efficiency and reliability;
- Single-phase heat transfer;
- Two-phase heat transfer;
- Heat transfer enhancement;
- Design and optimization;
- Artificial intelligence;
- Industrial applications.

## Guest Editor

Dr. Yu Xu

Key Laboratory of Aircraft Environment Control and Life Support, MIIT, Nanjing University of Aeronautics and Astronautics, 29 Yudao St., Nanjing 210016, China

## Deadline for manuscript submissions

closed (20 July 2024)

**Machines**

**an Open Access Journal by MDPI**

**Impact Factor 2.5**
**CiteScore 4.7**

mdpi.com/si/194032

*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).