Special Issue

Fluid Dynamics and Thermodynamics of Multiphase Flow

Message from the Guest Editor

In today's fast-paced technological world, the importance of high-heat-flux dissipation and thermal management is growing, particularly in fields like new energy vehicles and energy storage. Two-phase flow heat transfer is notable for its efficiency and energy conversion density, but it also presents challenges due to unpredictable dynamic behaviors and instabilities. Recent advancements in materials and surface technologies offer innovative solutions to these challenges. This Special Issue aims to highlight cutting-edge research in multiphase flow and heat transfer, providing a platform for sharing findings that address thermal management needs across industries. Topics of interest include:

- Two-phase flow patterns and heat transfer mechanisms
- Advanced thermal management strategies
- Phase change materials
- Numerical modeling of multiphase flow
- Micro/nanostructured surfaces
- Optimization of flow loop designs
- Stability analysis and control methods
- Applications of machine learning and AI

We invite original research, review papers, and perspectives to advance knowledge in this vital area.

Guest Editor

Dr. Chaoyang Zhang

Paris Elite Institute of Technology, Shanghai Jiao Tong University, Shanghai 200240, China

Deadline for manuscript submissions

20 November 2025

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/241986

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)