Special Issue

Fluid Flow and Heat Transfer During Boiling and Evaporation Processes: From Principles to Applications

Message from the Guest Editors

Efficient heat dissipation is essential in advanced industrial applications with high heat flux equipment. Spray cooling is a key technique, offering high heat removal rates, low flow requirements, and excellent temperature uniformity. It is widely used in supercomputers, space shuttles, hybrid vehicles, and more. However, the complexities of spray cooling—due to its transient and multiscale nature—make it a challenging area of study. This Special Issue aims to highlight recent advancements in heat transfer and fluid dynamics related to spray cooling, from fundamental principles to practical applications. We invite researchers to submit theoretical, numerical, or experimental work on topics including:

- Fundamental theories and mechanisms
- Visualization and measurement techniques
- CFD modeling and simulation
- Liquid film, droplet, and bubble dynamics
- Phase change heat transfer
- Heat transfer enhancement strategies
- Innovative spray cooling techniques
- Applications in energy systems, aerospace, metallurgy, and dermatology

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Deadline for manuscript submissions

25 February 2026

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/214460

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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.

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