Special Issue

Modern Approaches to Enhance Thermal Efficiency: Computational Fluid Dynamics (CFD) Methods and Machine Learning Applications

Message from the Guest Editors

This Special Issue aims to explore the integration of machine learning methods in a wide spectrum of CFD applications, such as enhancing turbulence modeling, optimizing mesh generation, and making real-time forecasts. By combining computational fluid dynamics and machine learning, we can overcome computational power limitations and predict complex flow events, among many other potential applications. This research direction provides researchers with opportunities to propose new solutions that benefit from the physical precision of CFD and the high prediction accuracy of machine learning methods.

- Convection (free/forced/mixed convection);
- Heat and mass transport;
- MHD flow;
- Radiation heat transfer;
- Nanofluid flow and heat transfer;
- Computational methods for fluid flow and thermal transport;
- Computational fluid dynamics (CFD)
- Application of Artificial Neural Network (ANN);
- Application of Machine Learning (ML) in CFD;

We are delighted to invite you to contribute new and innovative ideas on buoyant flow and thermal analysis to this high-impact Special Issue.

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Deadline for manuscript submissions

25 October 2026

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/236216

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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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