Special Issue

Thermal Design, Thermodynamic Analysis, and Optimization of Aero-Engines and Gas Turbines

Message from the Guest Editors

With the increasing operating temperatures of aero-engines and gas turbines, the cooling of high-temperature components has become a significant challenge. The development of reliable and efficient cooling structures is therefore essential to ensure the reliable operation of these systems. Traditional cooling methods may not be suitable for the new generation of aero-engines and gas turbines, as they may not provide the required cooling efficiency under extreme operating conditions. As a result, there is a need for novel cooling structures with enhanced cooling capabilities as well as cooling design methods with high efficiency and accuracy. The topics of interest for publication include, but are not limited to, the following:

- Overall thermal design and analysis of hot-temperature components such as blades and combustors;
- Thermal design and analysis of unit cooling structures;
- High-efficiency and high-precision thermal design methods;
- Enhancement of cooling data;
- Machine learning modeling of cooling performance;
- Proposal and optimization of new cooling structures.

Guest Editors

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Deadline for manuscript submissions

closed (15 April 2025)

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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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