Special Issue

Gas Turbine Performance and Power Plant Optimization

Message from the Guest Editors

For this Special Issue, we invite submissions of papers related to gas turbine performance and power plant optimization in general; potential topics for papers include (but are not limited to) those mentioned below:

- Fuel Flexibility: Transitioning from natural gas to hydrogen/ammonia as a fuel source for gas turbines can significantly reduce carbon emissions;
- Carbon Capture and Storage (CCS): Developing more efficient CCS technologies can capture and store carbon dioxide emissions from gas turbines, further reducing their environmental impact;
- Advanced Materials: The use of advanced materials such as ceramics and composites can enhance gas turbine efficiency and durability;
- Cogeneration: Combined heat and power (CHP) systems can maximize the use of waste heat from gas turbines, increasing overall energy efficiency;
- Digital Twin- and Simulation-Driven Optimization using Physics- and Data-Driven methods (CFD/AI/ML):
- Integrated Energy Systems with Gas Turbines
- Grid Integration: Developing smart grid technologies and grid-scale energy storage can improve the overall stability and reliability of power systems with intermittent renewables and gas turbines.

Guest Editors

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Deadline for manuscript submissions

closed (30 April 2024)

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Impact Factor 2.5
CiteScore 4.7

mdpi.com/si/187011

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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.

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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).