

Special Issue

Advanced Nuclear Energy Systems: Design, Analysis and Calculation Methods

Message from the Guest Editors

As the world accelerates its transition toward a low-carbon future, advanced nuclear energy systems, including Generation IV reactors, Small Modular Reactors (SMRs), and fusion concepts, are poised to play a pivotal role. These next-generation reactors present unique challenges, from complex multi-physics phenomena and advanced materials to enhanced safety requirements and economic viability. This Special Issue aims to gather high-quality, original research that addresses the key challenges in the lifecycle of advanced nuclear energy systems. We invite contributions on a wide range of topics, including but not limited to innovative reactor core and system designs, advanced thermal-hydraulic and neutronic analysis, high-fidelity modeling and simulation, verification and validation of computational tools, uncertainty quantification, and the application of artificial intelligence and machine learning in nuclear engineering. We hope to provide a premier platform on which researchers may share their latest findings, fostering collaboration and driving the future of clean and sustainable nuclear energy.

Guest Editors

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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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