Special Issue

Development and Application of Innovative Nuclear Energy Systems

Message from the Guest Editors

Nuclear energy stands as a cornerstone of sustainable and reliable energy sources, effectively meeting global energy demands while actively contributing to mitigating climate change challenges. As we transition towards cleaner energy systems, nuclear power emerges as a critical component, offering advantages that are essential for a sustainable future. The ongoing evolution of nuclear technology brings forth continuous innovations in reactor designs, fuel cycle, safety systems, and waste management. These advancements significantly enhance efficiency, safety, and introduce new applications such as nuclear–renewable hybrid systems, industrial heat applications, medical isotope production, and space exploration. This Special Issue aims to showcase the latest developments and applications in innovative nuclear energy systems, providing a comprehensive platform to discuss nuclear energy's pivotal role in shaping a sustainable future. Specifically, we invite contributions in the following key areas: advanced reactor concepts; Next-Generation nuclear fuels; computational modelling and simulation.

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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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