Special Issue

Molten Salt Reactors: Innovations and Challenges in Nuclear Energy

Message from the Guest Editors

Molten salt reactors (MSRs), as the only candidate adaptable to liquid fuel among Generation IV nuclear systems, have gained significant global attention for their exceptional potential thanks to their high thermal efficiency, inherent safety, fuel cycle flexibility, and distinguished flexibility. Their unique design, utilizing liquid fuel salts and passive safety mechanisms, positions them as a transformative solution for sustainable and low-carbon energy. The international communities have prioritized MSR research and development to address fundamental technical challenges, optimize principal design characteristics, and accelerate their commercialization. This Special Issue aims to showcase cutting-edge research and advancements in relation to MSR technologies, focusing on innovative designs and critical challenges. We encourage submissions that highlight breakthroughs in theoretical, computational, and experimental methodologies, fostering interdisciplinary collaboration to advance the investigation, realization, and demonstration of MSRs.

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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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