

Special Issue

Advanced Multi-physics Modelling and Simulation for Nuclear Technology

Message from the Guest Editors

The modelling and simulation of nuclear systems, with their complex geometry, coupling of various and different physics and scales, and increased safety and economic requirements, represent one of the key challenges for safer design development and operation in nuclear power plants. The design of a new reactor, whether fission or fusion, requires the development of new and better approaches to properly address the key issues of safe design and its optimization and understanding and enhance material behaviour predictions and understanding. Efficient and/or new multiscale/multiphysics modelling and high-performance computing and simulation tools are seen as necessary to predict complex nuclear system behaviour, accounting for the synergy between mechanical, thermal, chemical, and radioactive conditions during steady-state operation and transients. Submissions on the following topics are welcome:

- Multiscale/multiphysics M&S of fission and fusion nuclear systems;
- Design by analysis and safety analysis of NPPs (including SMRs);
- Material ageing and LTO assessments;
- Computational fluid dynamics and applications;

Guest Editors

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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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