

## Special Issue

# Advances in Nuclear Thermal Hydraulics and Heat Transfer for Energy Systems

### Message from the Guest Editors

This Special Issue aims at showcasing the latest developments in nuclear thermal hydraulic research that contribute to the advancement of next-generation energy systems. We welcome contributions related to reactor design and plant operation. Topics of interest include, but are not limited to, the following:

- Thermal hydraulic analysis of microreactors, SMRs, and other Gen-IV reactors (MSR, SFR, HTGR, etc.);
- Design and evaluation of passive safety systems for microreactors and SMRs;
- Heat transfer enhancement in advanced reactor systems;
- Transient and accident scenarios (e.g., LOCA, RIA) modelling in microreactors and SMRs;
- Coupled neutronics–thermal hydraulics simulations;
- Multiphase flow, instabilities, and supercritical flow modelling in advanced reactor systems;
- High-fidelity CFD and system-level simulations for nuclear applications;
- Experimental methods and integral test facilities for thermal hydraulic validation;
- Data-driven modelling, machine learning, and AI applications in nuclear thermal hydraulics;
- Heat exchanger and steam generator performance in advanced reactor designs;
- Thermal management in hybrid energy systems (e.g., energy storage, hydrogen production, and desalination).

### Guest Editors

Dr. Jee Hyun Seong

Department of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea

Dr. Guanyu Su

Department of Nuclear Engineering, University of California, Berkeley, CA 94720, USA

### Deadline for manuscript submissions

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Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[energies@mdpi.com](mailto:energies@mdpi.com)

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## About the Journal

### 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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### Editor-in-Chief

Prof. Dr. Enrico Sciubba

Department of Mechanical and Industrial Engineering, University  
Niccolò Cusano, 00166 Roma, Italy

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