



## Advanced Numerical Modelling Techniques for Nuclear Reactors

Guest Editors:

**Dr. Victor Hugo Sánchez Espinoza**

Karlsruhe Institute of Technology (KIT), Institute of Neutron Physics and Reactor technology (INR), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

**Dr. Andrea Zoia**

Université Paris-Saclay, CEA, Service d'Etudes des Réacteurs et de Mathématiques Appliquées, 91191 Gif-sur-Yvette, France

Deadline for manuscript submissions:

**closed (31 July 2022)**



### Message from the Guest Editors

Dear Colleagues,

We invite the nuclear community (academia, research institutions, industry, regulators, and TSO) to submit original and unpublished manuscripts to this Special Issue that is focused on recent developments relevant to “Core and Reactor Analysis”.

The goal of the Special Issue is to publish the most recent research results on computational reactor physics and analysis relevant for design optimization and safety evaluation. The topics suited for this Special Issue include, but are not limited to:

- New deterministic transport solvers for pin-based core analysis (static and transients);
- Advances in Monte Carlo methods for the analysis of core transients, e.g., REA;
- New methods for the detailed multi-physics analysis of core depletion (neutronic, thermal hydraulic, and thermo-mechanics);
- Multiscale reactor analysis method based on the coupling of different thermal hydraulic solvers (CFD, subchannel, and system);
- New reactor physical methods for the improved prediction of safety parameters based on different transport approximations (diffusion, SP3, MOC, etc.);
- Applications of the methods and code to LWR including SMR.



# energies



an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Enrico Sciubba

Department of Mechanical and  
Aerospace Engineering,  
University of Roma Sapienza, Via  
Eudossiana 18, 00184 Roma, Italy

## 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.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), Ei Compendex, RePEc, Inspec, CAPlus / SciFinder, and other databases.

**Journal Rank:** CiteScore - Q1 (Control and Optimization)

## Contact Us

---

*Energies* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/energies](http://mdpi.com/journal/energies)  
[energies@mdpi.com](mailto:energies@mdpi.com)  
[X@energies\\_mdpi](https://twitter.com/energies_mdpi)