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## Advanced Examinations, Methods, and Tools for the Performance Analysis of Nuclear Fuel Systems

Guest Editors:

**Dr. Luca Capriotti**

Idaho National Laboratory, Idaho Falls, ID, USA

**Dr. Tiankai Yao**

Idaho National Laboratory, Idaho Falls, ID, USA

**Dr. Pavel Medvedev**

Idaho National Laboratory, Idaho Falls, ID, USA

### Message from the Guest Editors

Dear Colleagues,

Nuclear energy is the backbone of low-carbon electricity generation. Nuclear fuel provides a source of energy via fission reactions, which split uranium or plutonium fissile atoms to produce energy. The sequent energy transfer from nuclear energy to thermal energy creates thermal-mechanical effects, as well as radiation damages to nuclear fuel systems (here intended as nuclear fuel and cladding materials).

This Special Issue welcomes contributions that attend to topics including, but not limited to, the following:

- Innovative approaches to experimental examinations applied to nuclear fuel system performance;
- Multiscale experimental examinations applied to nuclear fuel systems (irradiated and as fabricated);
- Multiscale modelling and advanced methods;
- Experimental and modeling verification and validation for nuclear fuel systems;
- Domain-knowledge-informed and scientific-data-driven artificial intelligence, machine learning, and deep learning applied to nuclear fuel system performance analysis.

Deadline for manuscript submissions:

**10 January 2025**



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Dr. Luca Capriotti

Dr. Tiankai Yao

Dr. Pavel Medvedev

*Guest Editors*

# Special Issue



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## 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.

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

Tel: +41 61 683 77 34  
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