Special Issue

Subsurface Intelligence: Numerical and Data-Driven Methods for Geoenergy Systems

Message from the Guest Editor

This Special Issue welcomes interdisciplinary applications in geothermal energy, carbon capture and storage (CCS), hydrogen storage, and unconventional resources, particularly contributions in the following areas:

- Numerical modeling of subsurface flow, transport, and geomechanics;
- Machine learning and AI for subsurface prediction, control, and optimization;
- Hybrid modeling frameworks combining physics-based and data-driven methods;
- Sensor integration and monitoring for real-time field intelligence and subsurface assurance;
- Smart subsurface systems for geoenergy operations;
- Uncertainty quantification and probabilistic risk-informed decision frameworks;
- Data assimilation and inversion techniques for subsurface characterization;
- Fracture modeling and stimulation analysis in geothermal and unconventional reservoirs;
- Predictive analytics for well performance, reservoir behavior, and field development;
- Reliability engineering and assurance strategies for long-term subsurface safety;
- Applications in geothermal energy, CCS, hydrogen storage, and unconventional resources;
- Case studies demonstrating field deployment of intelligent subsurface technologies.

Guest Editor

Dr. Alireza Rangriz Shokri
Department of Civil and Environmental Engineering, University of Alberta, Edmonton, AB T6G 1H9, Canada

Deadline for manuscript submissions

25 February 2026

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/253435

Energies
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
energies@mdpi.com

mdpi.com/journal/energies

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/journal/energies

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.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

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)

MDPI