

## Special Issue

# Emerging Technologies and Intelligent Solutions for Subsurface Energy Systems: Applications in Oil & Gas, Geothermal, CCUS, and Hydrogen

### Message from the Guest Editors

Subsurface energy systems are evolving rapidly, supported by new technologies that help us better understand the Earth, improve efficiency, and operate more responsibly. This Special Issue welcomes research that advances oil and gas development, reservoir engineering, geoscience workflows, geothermal energy, CO<sub>2</sub> capture and storage, and hydrogen technologies. We encourage submissions featuring artificial intelligence, data-driven tools, advanced sensors, novel materials, improved monitoring techniques, innovative laboratory methods, and new modeling or simulation approaches. Studies focused on safety, sustainability, and real-world field applications are especially valuable. Our goal is to create a platform where researchers, students, educators, and industry professionals can share practical insights, foundational discoveries, and forward-looking ideas. By bringing together technological innovation and domain expertise, this Special Issue aims to highlight emerging solutions that strengthen energy security while supporting the transition to cleaner, more efficient, and more resilient subsurface energy systems.

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### Deadline for manuscript submissions

30 October 2026



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