

Special Issue

Intelligent and Sustainable Safe Coal Mining: AI-Assisted Disaster Mitigation, Carbon Sequestration, and Energy Utilization

Message from the Guest Editors

Topics include:

- Intelligent prediction and early warning of dynamic disasters in coal mines
- Intelligent monitoring, sensing, and data-driven analysis technologies for coal mine safety
- Mechanisms and control of coal and gas dynamic disasters
- Gas migration, seepage behavior, and multi-field coupling processes in coal seams
- AI-assisted modeling and simulation of coal mine safety-related processes
- Carbon sequestration in coal mines, including CO₂ storage in coal seams and CO₂–CH₄ interaction
- Safety assessment and risk control of carbon sequestration processes in coal mining environments
- Energy utilization and emission reduction technologies in coal mines, including coal mine gas utilization
- Intelligent optimization of coal mine ventilation systems for safety and energy efficiency
- Coordinated control of energy efficiency improvement and carbon emission reduction in coal mining processes
- Intelligent control and optimization of coal mine gas drainage and extraction systems
- Integration of intelligent technologies with coal mine safety engineering and process safety
- Experimental investigations, numerical modeling, and field applications related to intelligent and sustainable coal mining

Guest Editors

Dr. Feng Du

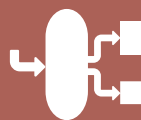
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