Special Issue

Circular Economy in Energy Extraction: Geological Insights and Innovations

Message from the Guest Editors

Achieving sustainability in resource extraction is a critical challenge as industries transition to cleaner energy systems. This Special Issue explores low-impact extraction techniques, sustainable resource management, and circular economy principles in both conventional and emerging energy sectors. We invite contributions focusing on geological hydrogen (including natural H_2 and subsurface H_2 production and storage), geothermal energy, carbon capture, utilization, and storage (CCUS), and responsible extraction practices for critical minerals such as lithium. Topics of interest include, but are not limited to, low-emission extraction, waste-to-energy strategies, sustainable mining techniques, and resource recovery from geological formations. Case studies, innovative technologies, and interdisciplinary research that align with sustainability goals are highly encouraged. Through this Special Issue, we aim to bridge the gap between geosciences, engineering, and environmental sustainability to advance knowledge in low-impact extraction methods and foster innovative pathways for the future of clean energy production.

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Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherentset of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientificallybased political decisions.
We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

Editor-in-Chief

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