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Applications and Challenges in Carbon Capture, Utilization and Storage

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Message from the Guest Editors

Carbon Capture, Utilization and Storage (CCUS) refers to a suite of technologies that can play an important and diverse role in meeting global energy and climate goals. CCUS schemes can be classified by their capacity and permanence of storage, environmental consequences, and cost of implementation. Any viable system for storing carbon must be effective and cost competitive, stable as long-term storage, and environmentally benign.

Deadline for manuscript
submissions:

closed (20 December 2023)

The challenges in scaling the industry, as with most industries, lie primarily in the cost of developing and operating the necessary infrastructure. Technical innovation through improved capture technologies and modelling of transport and storage will be important in mitigating these costs. This Special Issue will publish high-quality, original research papers, in the overlapping fields of:

CO₂ capture (pre-combustion, oxy-fuel combustion, post-combustion, chemical looping combustion, etc.);

CO₂ utilization (CO₂ flooding, CO₂-foam flooding, CO₂ huff-n-puff, CO₂ fracturing, CO₂ thickener, etc.);

CO₂ storage (CO₂-water-rock reaction, CO₂/hydrocarbon phase behaviors, storage capability prediction, CO₂ leakage, etc.);



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Special Issue



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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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