Joint Special Issue

Trends in Carbon Capture, Storage and Utilisation

Message from the Guest Editors

Carbon capture, storage, and utilization (CCSU) have recently drawn attention within the research community and funding bodies. Researchers have come up with new research lines in this direction, with innovative and advanced sorbents and also with new process routes. New sorbents have been characterized, and their performance has also been checked, with some examples of cutting-edge sorbents including MOF-based, amine-based, CaO looping, and metal-based ones. Additionally, numerous new catalysts for CO2 thermal, electro-, and photoconversion have been developed. All these new materials can have higher performance and have an environmental impact on CCSU lifecycle assessment. When it comes to new process routes and process integration of CCSU within different plants and industries, it is important to highlight the impact of these strategies. Optimization of operational existing conditions in pilot plants and new issues tackled in process integration has been considered for carbon capture, storage, and/or utilization. These advancements can deliver lower energy consumption and have an immediate impact on plant efficiency.

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