Special Issue

Advanced Solutions in the Reduction, Conversion, and Utilization of CO and CO_2

Message from the Guest Editor

As interest in global warming increases around the world, it is important to suppress CO2 emissions into the atmosphere as well as treat CO2 and CO as unused resources and convert them into value-added chemicals and fuels. The integration of CO2 and CO utilization pathways within CCUS frameworks broadens the impact of mitigation strategies. By diverting these gases from storage-only routes and channeling them into productive applications, industries can offset part of the cost of capture while creating circular carbon loops. Converting CO2 and CO into synthetic fuels, polymers, carbonates, or platform chemicals diversifies the mitigation toolbox and supports sectors that are otherwise difficult to decarbonize. Such developments have been receiving significant levels of attention as carbon capture and utilization (CCU) technology. Four major CCU technologies using thermochemistry, photochemistry, bioprocessing, and electrochemistry are particularly promising in this field, but they have their own technical challenges.

Guest Editor

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Deadline for manuscript submissions

5 November 2026

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/263289

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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