

Special Issue

Current Initiatives on Carbon Dioxide Utilization (CDU) for Fuel Production

Message from the Guest Editors

Following recent policy initiatives and in view of the larger picture unfolding at the global theater, this Special Issue aims to elucidate the main points, considerations, and dynamics that drive modern CDU initiatives, focusing on processes for converting CO₂ into fuel products and other industrial chemicals of value. The issue covers all studies related to CCUS technology with an emphasis on CDU for the industrial production of fuels and chemicals (e.g., blue hydrogen, concrete, formate and formic acid, methanol, petrochemicals, urea), CDU involving biological processes (e.g., biogas synthesis via bacterial fermentation, algae production for biofuel synthesis, and biomineralization), and processes that classify as power-to-liquid (e.g., methanol) or power-to-gas (e.g., hydrogen, methane) by utilizing surplus renewable electricity.

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Deadline for manuscript submissions

15 August 2025



Fuels

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