Special Issue

Electrochemical CO_2 Reduction: Electrocatalyst, Reaction Mechanism, and Process Engineering

Message from the Guest Editors

The electrochemical reduction of CO2 (CO2RR) is a promising approach to converting CO2 into value-added fuels and chemicals using renewable electricity, offering a sustainable means of carbon management and energy production. This Special Issue aims to showcase recent developments in CO2 electrolysis, covering key aspects such as catalyst design, reaction mechanisms, electrolyte and reactor optimization, product purification, and system integration. Additionally, we welcome contributions that present approaches to CO2 capture and purification that are tailored to electrochemical conversion. The scope of this Special Issue includes, but is not limited to, the following topics:

- Development and characterization of electrocatalysts;
- Mechanistic studies and theoretical modelling;
- Electrolyte and reactor design for improved performance;
- Strategies to enhance product selectivity and energy efficiency;
- Product collection, separation, and industrial applications;
- Integration of CO2 capture with electrochemical conversion.

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Message from the Editor-in-Chief

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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