



Advances in Electrochemical Catalysis for CO₂ Reduction

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Deadline for manuscript
submissions:

25 February 2025

Message from the Guest Editor

The utilization of CO₂ is an effective strategy for mitigating the greenhouse effect through the production of valuable chemicals and fuels. The electrochemical CO₂ reduction reaction (CO₂RR) is considered a promising technology for reducing CO₂ emissions and achieving sustainable carbon neutrality. However, the practical application and commercialization of CO₂RR face significant challenges, including high overpotential, sluggish kinetics, a broad distribution of target products, competitive hydrogen evolution reaction in aqueous media, and the requirement of multi-electron transfer steps for most catalysts during CO₂RR. Therefore, it is essential to develop highly selective and active electrocatalysts to improve CO₂RR performance.

This Special Issue, entitled “Advances in Electrochemical Catalysis for CO₂ Reduction,” aims to provide a platform for highlighting the recent advances in this field. Potential topics include, but are not limited to, the following:

- Advances in electrocatalyst design;
- The development of CO₂RR devices;
- Operando/in situ characterization techniques;
- The investigation of dynamic reaction processes for understanding reaction mechanisms.





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Message from the Editor-in-Chief

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