Special Issue

Advances in Electrochemical Catalysis for CO_2 Reduction

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.

Guest Editor

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Editor-in-Chief

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