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## Advances in Electrochemical Catalysis for CO<sub>2</sub> Reduction

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### Message from the Guest Editor

The utilization of CO<sub>2</sub> is an effective strategy for mitigating the greenhouse effect through the production of valuable chemicals and fuels. The electrochemical CO<sub>2</sub> reduction reaction (CO<sub>2</sub>RR) is considered a promising technology for reducing CO<sub>2</sub> emissions and achieving sustainable carbon neutrality. However, the practical application and commercialization of CO<sub>2</sub>RR 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 CO<sub>2</sub>RR. Therefore, it is essential to develop highly selective and active electrocatalysts to improve CO<sub>2</sub>RR performance.

This Special Issue, entitled “Advances in Electrochemical Catalysis for CO<sub>2</sub> 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 CO<sub>2</sub>RR devices;
- Operando/in situ characterization techniques;
- The investigation of dynamic reaction processes for understanding reaction mechanisms.



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# Special Issue



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## Message from the Editor-in-Chief

*Processes* (ISSN 2227-9717) provides an advanced forum for process/system-related research in chemistry, biology, material, energy, environment, food, pharmaceutical, manufacturing and allied engineering fields. The journal publishes regular research papers, communications, letters, short notes and reviews. Our aim is to encourage researchers to publish their experimental, theoretical and computational results in as much detail as necessary. There is no restriction on paper length or number of figures and tables.

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