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Electrocatalyst Design for the Reduction of Carbon Dioxide

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Message from the Guest Editor

With the over-exploitation of fossil fuels, the atmospheric CO₂ concentration continuously rises, causing the global greenhouse effect and other environmental problems. Electrocatalytic CO₂ reduction reaction (CO₂RR), which can cleanly obtain various hydrocarbons, is considered a potential solution. Fundamental understanding, rational design, and delicate manipulation of catalysts are the keys to achieving high-performance electrochemical CO₂ conversion. Catalysts with special spatial arrangement can exhibit high catalytic activity, and the advantageous morphology, suitable support, electronic structure, and chemical properties can further improve the performance of CO₂RR. However, there are still many questions that need to be explored to reach general conclusions about superior activity, selectivity, and stability. Research is addressing fundamental questions, but industrial-level devices and systems are not out of reach. These are currently open questions and hot and timely topics. Scientists around the world are invited to contribute to this Special Issue of Crystals, which will facilitate the development of the CO₂ electrolysis field.



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Special Issue



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Message from the Editor-in-Chief

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