

Special Issue

Application of Catalysts in CO₂ Capture and Utilization

Message from the Guest Editors

It is widely accepted by the scientific community that anthropogenic CO₂ emissions are a significant cause of global warming. Carbon capture and utilization (CCU) is potentially an effective approach to control CO₂ emissions, and could play a crucial role in achieving the Paris Agreement (COP21) targets.

However, the development of superior, stable, and cost-effective catalysts capable of effectively optimizing the CO₂ capture process and converting CO₂ into carbon-neutral fuels is still a great challenge. Accordingly, this Special Issue aims to collect original research papers, reviews, and perspectives on the recent advances made in the synthesis and application of catalysts in CO₂ capture and utilization. Topics of interest include, but are not restricted to, the following: (1) Development of CO₂ capture processes using catalysts, including the catalytic enhancement of CO₂ absorption-desorption performance; (2) Catalytic CO₂ conversion into value-added chemicals, including hydrogenation (synthesis of light olefins, dimethyl ether, liquid fuels, and alcohols), photo-electrochemical reduction, and combination reactions.

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