

Special Issue

Catalytic Hydrogenation of CO₂

Message from the Guest Editors

We have noticeably felt the rising impact of worldwide extreme weather on our daily life in the recent years, although the direct correlation with CO₂ emissions is still a scientific topic. It is urgent for human beings to keep the CO₂ emissions at a safe level. Measures may include the reduction of emissions, capture and storage, conversion to value-added chemicals, and so forth. For the conversion, the typically utilized way is the catalytic hydrogenation of CO₂, which includes thermocatalytic, electrochemical, biochemical, plasma, photocatalytic methods, etc. A growing amount of excellent work has been carried out on CO₂ hydrogenation to produce CO, methanol, light olefin, dimethyl ether, methane, etc. However, efficient catalysts with combined high activity, selectivity and stability are still the ultimate aim to pursue. In addition, microscopic insight into the catalytic mechanism on an elemental level may speed up the design and exploitation of novel catalysts.

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