

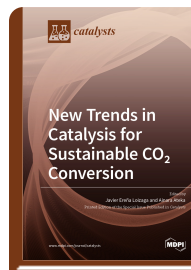
Special Issue Reprint

New Trends in Catalysis for Sustainable CO₂ Conversion

www.mdpi.com/books/reprint/6516

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ISBN 978-3-0365-5911-7 (Hardback)
ISBN 978-3-0365-5912-4 (PDF)



This Special Issue on “New Trends in Catalysis for Sustainable CO₂ Conversion”, released in the Catalysts open access journal, shows new research about the development of catalysts and catalytic routes for CO₂ valorization, in addition to the optimization of the reaction conditions for the process. This issue includes ten articles and three reviews about different innovative processes for CO₂ conversion.

Carbon capture and storage (CCS) is a physical process consisting of the separation the CO₂ (emitted by industry and the combustion processes for energy generation) and its transportation to geological storage isolates it from the atmosphere in the long term. However, the most promising routes for CO₂ mitigation are those pursuing its catalytic valorization. By applying specific catalysts and suitable operating conditions, CO₂ molecules react with other components to form longer chains (i.e., hydrocarbons). Accordingly, effort should be made to catalytically valorize CO₂ (alone or co-fed with syngas) as an alternative way of reducing greenhouse gas emissions and obtaining high-value fuels and chemicals. Carbon capture and utilization (CCU) is a developing field with significant demand for research in the following aspects:

The development of new catalysts, catalytic routes, and technologies for CO₂ conversion;

The study of new processes for obtaining fuels and chemicals from CO₂;

Optimization of the catalysts and the reaction conditions for these processes;

Further steps in advanced processes using CO₂-rich feeds (H₂+CO₂ or CO₂ mixed with
sing product yields.

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