



an Open Access Journal by MDPI

Catalysis and Catalytic Processes for CO₂ Conversion toward NetZero

Guest Editors:

Dr. Kwang-Deog Jung

 Clean Energy Research Center, Korea Institute of Science and Technology, Seoul, Korea
Division of Energy Environment Technology, University of Science and Technology, Deajeon, Korea

Prof. Dr. Jihun Oh

Department of Materials Science and Engineering, KAIST, Daejeon, Korea

Deadline for manuscript submissions: closed (20 March 2022)



Achieving the NetZero goal across the world is beyond necessary—it is absolutely pivotal at this point. CCUS plays a significant role in this, and new approaches to CO2 conversion must be considered. There are, however, several obstacles to the commercialization of CO2 conversion processes. This will lead to the processing of energy that emits CO2 not being as big an issue for LCA analysis anymore, being replaced by the amount of electrification required in the process, which will be considered for both LCA and TEA.

Carbon-based products in a NetZero society should be manufactured mainly via CO2 conversion technology. Clearly, power plants and chemical processes using fossil fuels can be maintained as long as CCUS can supply carbon-based products while simultaneously respecting the NetZero rule.

This Special Issue aims to cover recent progress and advances in both catalysts and processes in the field of CO2 conversion: (1) CO2 hydrogenation, (2) monomer and polymer synthesis from CO2, (3) electrochemical CO2 reduction, (4) biomass utilization from green algae, (5) photoelectrochemical CO2 reduction, and (6) enzyme and microbial electrosynthesis from CO2.



