Special Issue

Catalysis and Catalytic Processes for CO_2 Conversion

Message from the Guest Editors

There is still a great deal of controversy over whether CO2 conversion can be considered as a means to massively mitigate CO2. Nonetheless, recent progress in CO2 conversion has shown that the technology has the potential to create new industries in new chemical and energy fields. Catalysis for CO2 conversion have been mainly focused on CO2 hydrogenation and polymer synthesis. The high price of hydrogen is the biggest obstacle to the industrialization of CO2 hydrogenation, but, in recent years, the development of active catalysts at low temperatures and processes have been carried out to overcome these economic limitations. The innovative routes are also explored to prepare environmentally benign polymer from CO2. On the other hand, the advances on the electrochemical CO2 reduction deliver persuasive results that the electrochemical CO2 conversion can be commercialized in near future. Furthermore, enzyme and microbial electrosynthesis are also studied to reduce CO2 into valuable products. The processes using the innovative catalysts are also studied to examine the potential of the commercialization of the CO2 conversion.

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