Special Issue

Heterogeneous Catalysts for CO_2 Valorisation

Message from the Guest Editors

Today, several processes for CO2 valorization are available or under development, including the CO2 splitting to CO and O2; the hydrogenation of CO2 to methane or to liquid hydrocarbons, to store energy excess from industrial wastes and/or nonprogrammable renewable sources in well-designed gas infrastructure; the reaction of CO2 with CH4, called dry reforming; and the high temperature co-electrolysis of CO2 with H2O or the artificial photosynthesis. However, the CO2 molecule is thermodynamically stable, and its activation requires the use of suitable heterogeneous catalysts and alternative sustainable processes. In this regard, there is a continuous effort to improve the performances of the catalysts and their durability through the study of all the fundamental aspects involved in the catalytic process. This Special Issue covers the design, preparation, and characterization of novel heterogeneous catalysts, as well as new, advanced, and sustainable technologies, for CO2 valorization.

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