Special Issue

Catalytic Activity on Thermochemical and Non-Thermal Plasma Conversion/Utilization of Methane and Carbon Dioxide

Message from the Guest Editors

An interesting perspective for CO2 Carbon Capture and Utilization technologies (CCU) is to consider these technologies not only as a way to replace fossil fuels, but also as an alternative for the production of energy carriers that would allow the storage of intermittent production of electricity from renewable sources in a power-to-gas or power-to-liquid conversion process. The valorization of this molecule through advanced processes opens a portfolio of products such as syngas (CO/H2 mixtures), CH4, methanol (CH3OH) and DME (CH3OCH3), among others. The conversion of methane into clean fuels, chemical feedstocks, or high-value carbon materials, such as hydrogen, ethylene (C2H4), methanol, or carbon supports, is advantageous from both energetic and economic perspectives. Advanced technologies, which employ direct catalytic reactions or the syngas route, aim to enhance efficiency and minimize CO2 emissions.

Guest Editors

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