

## 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 CO<sub>2</sub> 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/H<sub>2</sub> mixtures), CH<sub>4</sub>, methanol (CH<sub>3</sub>OH) and DME (CH<sub>3</sub>OCH<sub>3</sub>), among others. The conversion of methane into clean fuels, chemical feedstocks, or high-value carbon materials, such as hydrogen, ethylene (C<sub>2</sub>H<sub>4</sub>), 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 CO<sub>2</sub> emissions.

### Guest Editors

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### Deadline for manuscript submissions

closed (31 October 2025)



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