# Special Issue

# $CO_2$ Capture and Conversion Processes: Recent Trends and Future Perspectives

## Message from the Guest Editors

- The amplification of energy demands due to global population growth and modern lifestyles result in increasing CO2 atmospheric levels, mostly attributed to intensifying fossil fuel industrial production. International initiatives, such as the Kyoto protocol and the Paris agreement, target the significant reduction of CO2 emissions in order to mitigate climate change. Towards this direction, various technologies have emerged, aiming to capture CO2 and transform it to useful products. Energy-efficient CO2 adsorption and absorption processes for capturing CO2 from various point emission sources and directly from air (DAC), employing innovative low-cost material solvents and membranes, as well as innovative conversion processes including electrocatalytic CO2 reduction reactions (CO2RRs) to useful products, are of major importance.
- The present Special Issue seeks high quality works, focusing on CO2 capture and CO2 conversion technologies. The aim of the Issue is to collect recent research and review works related to the aforementioned processes targeting CO2 mitigation.

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## Deadline for manuscript submissions

closed (15 September 2025)


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