

Special Issue

CO₂ Sequestration, Capture and Utilization (2nd Edition)

Message from the Guest Editor

With the progress that is being made in industrialization, large amounts of fossil energy are being burned, and forest areas are reducing. These factors have led to increased emissions of the greenhouse gas carbon dioxide and the worsening of global warming, making this an extremely serious environmental challenge for all of humanity to face. Carbon capture, storage, and utilization (CCUS) technology can adsorb, fix, and utilize emitted CO₂, meaning that released CO₂ can be separated from industrial exhaust and other emission sources and then stored or reused for a long time.

Therefore, CCUS technology can be highly effective in reducing CO₂ emissions and mitigating the greenhouse effect. This Special Issue welcomes the submission of reviews and research papers related to CO₂ capture, storage, and utilization technologies, focusing on the following topics:

- Design, development, or optimization of CO₂ capture, storage, and utilization processes;
- New CO₂ adsorption materials (e.g., activated carbon, MOFs, etc.);
- Novel catalysts for CO₂ utilization (e.g., photocatalysts, electrocatalysts, or thermocatalysts);
- Novel CO₂ separation materials (e.g., membrane materials, ionic solutions, etc.)

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

Dr. Daniele Contini

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