

Carbon Dioxide Sequestration: A Review on the Current Techniques and the Way

Forward

ABSTRACT

The effects of CO₂ released from the combustion of fossil fuel and the ensuing global warming have caused a noticeable climate change throughout the world. The resulting efforts have been geared to reducing and removing atmospheric CO₂. One of the most prominent efforts undertaken by researchers worldwide is to capture and store CO₂ or carbon dioxide capture and sequestration (CCS) using various methods and techniques. Post-combustion capture seems promising in terms of design, but more importantly, it can be easily integrated into existing plants thus providing a cheap and instant improvement. Activated carbon adsorption method seems to be the most cost efficient for post-combustion capture as its precursors are cheap and abundant, even though zeolite and ZIF counterparts show better selectivity and adsorption but are more expensive. In this paper, different ideas of CCS are reviewed individually and discussed with the sole aim of presenting the next step for achieving a sustainable method for the removal of atmospheric CO₂.