



Catalytic CO₂ Desorption for Ethanolamine Based CO₂ Capture Technologies

UW ID: 14-109

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Patent Status: Patent Pending

Description of Technology

Greenhouse gases are increasingly being emitted into the atmosphere. One of the major greenhouse gases is carbon dioxide (CO₂). The high demand for fossil fuel is largely responsible for the increase in the CO₂ concentration levels in the atmosphere. Capturing CO₂ emitted from power plant flue gas has been considered a potentially effective approach to the control of atmospheric CO₂ levels.

The “chemisorption” method, which uses chemical reactions to adhere chemicals together, has been considered the most practical technology for the capture and reduction of CO₂ emissions. However, chemical adsorption requires high energy consumption. To considerably decrease the energy consumption of chemisorption and make the process more economically feasible for CO₂ capture, researchers from the University of Wyoming discovered the use of catalyst, TiO_x(OH)_y. This catalyst is shown to accelerate CO₂ desorption and decrease energy consumption even when exposed to various temperatures.

Applications

This highly efficient catalyst has promising industrial application for the capture of CO₂ from flue gas and other fossil fuel emissions.

Features & Benefits

- Highly efficient
- Potential contributor of CO₂ reduction in the atmosphere

Market Opportunity

This catalyst could improve the overall atmospheric quality in the future if used by gas, oil, or other industries for CO₂ capture. With the current high demand of fossil fuels and tighter regulations of emissions, this catalyst could be useful to the thousands of power plants and many other applications across the globe.



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