

Systems and Methods for Converting Carbon Dioxide into Chemical Feedstock

Researchers at the University of South Florida have developed a new method for the management of carbon dioxide. This method may be implemented to reduce greenhouse gas emissions and turn carbon dioxide into useful feedstock.

Carbon dioxide is a stable chemical requiring a significant driving force for its conversion. For instance, the splitting of carbon dioxide to carbon monoxide and molecular oxygen is not a favorable reaction under typical conditions. In the era of global warming, with the primary cause being carbon dioxide, the conversion of the gas to a less harmful form is desirable.

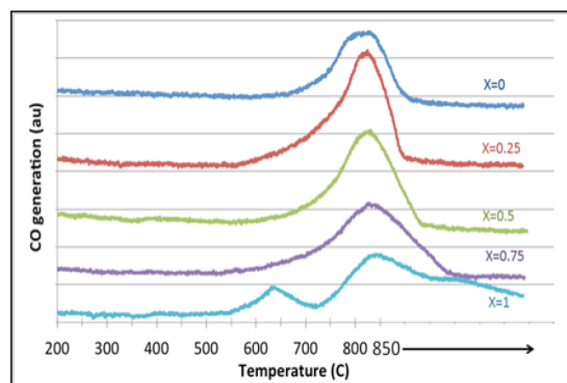
This invention utilizes a catalyst, made from a novel material combination, and solar energy to convert carbon dioxide into a useful chemical feedstock in an energy efficient manner. This novel chemical route for the transformation of carbon dioxide to carbon monoxide and oxygen may be incorporated into various industrial processes.

The application of this technology would be with carbon capture systems, energy production, and any industrial system that releases carbon dioxide.

ADVANTAGES:

- Eliminates CO₂ emissions from point sources
- Utilizes solar energy to reduce cost
- Can be integrated with other processes to make liquid fuels

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Conversion of carbon dioxide to carbon monoxide. All samples used the same feed of carbon dioxide.

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