

Reduction of Global Warming/ Climate Change through Carbon Dioxide Photosynthesis Using Novel High Performance Aerogel Photocatalysts

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Background/Objectives. Excessive accumulation of carbon dioxide (CO₂) gas in the atmosphere is blamed for global warming and climate change. This excess is due to disequilibrium between increased production of CO₂ due to increased human population and activities, while simultaneously reducing CO₂ consumption by trees and plants, due to deforestation.

Approach/Activities. Excess CO₂ can be reduced by mimicking natural photosynthesis by trees, through the use of novel and highly efficient aerogel photocatalysts proposed by Taasi Corporation. To ensure the feasibility of this concept, Taasi has made in-depth studies into the thermodynamics and engineering aspects of the photocatalytic conversion of CO₂ into useful products, using either natural daylight, or electric light at the desired light wavelength. The Taasi aerogel photocatalytic process may be applied on a large, medium, or small scale, and even at an individual household level [The Attia Aerogel Tree].

Results/Lessons Learned. The scientific, engineering, and potential applications will be discussed at the conference presentation.