From Global Warming to Stronger Economy

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Over the last few decades, since the industrial revolution, the climate system lost its natural balance leading to noticeable change in the climate. The greenhouse gases G.H.Gs have been major cause of the climate change issue. G.H.Gs assemble together forming a layer around the earth preventing sun rays from reflecting back to space and changing earth's average temperature about 3? annually affecting agriculture , economy, weather pattern ,and species extinction .Methane and carbon dioxide play the dominant role in that phenomenon. Some Previous solutions worked on reducing the emission of those gases while others chose sequestration of only one gas. Even with their great attempts trying to reduce those emissions, stopping them right now won't reduce the climate change rate as the pre-existing emitted gases will keep global warming running for another 150 year. Knowing so, the system was designed to capture CH4 &CO2 from atmosphere. The prototype was constructed in a tree-like shape divided into three sections. Firstly is the tree leaves, composing of polymerized Diethanolamine which is responsible for CO2 capturing. Secondly the tree stem core, which contains the electrochemical cell that produces carbon Nano fibers from captured CO2. Finally the tree stem wall, a four- wall system with SBN zeolite spreaded on it to physically adsorb methane. A significant advantage of the system over others is that it captures two main gases "CH4 &CO2"and operate to produce a new valuable product "carbon Nano fibers" with high yield. High efficiency, cost effectiveness, sustainability, and applicability were the design requirements chosen and achieved in the system.

Awards Won: