Sky Cleaner: Atmosphere's Purification from Greenhouse Gases

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The greenhouse gases are harming our environment, especially the ozone layer and our health. That's why we decide to treat them in the atmosphere by sending a flying system to the stratosphere using a stratospheric balloon which reaches the stratosphere and remains fixed in this layer, so we add 4 ventilators to guide it to the polluted areas. It contains a new system we named ATGS (Adsorbing Toxic Gases System), composed of sensors of greenhouse gases to detect their presences and which will unleash the valve of a column that contain a chemical product to adsorb these toxic gases. We choose the activated carbon due to its surface area which is available for adsorption. But after a period, it will be saturated when all its pores are filled by greenhouse gases. Thus we will regenerate it at a high temperature. And after a big number of regeneration, it loses its adsorption capability, so it will be rejected in nature which is a principal source of pollution. That's why we decided to valorize these toxic products by transform them into a biogas which is renewable energy source. To conclude, this project can not only eliminate air pollution and save our environment but also we can take advantage of those rare and benefic products. In addition, it respects the main principles of the green chemistry which makes it more important and extraordinary.

Awards Won:

Patent and Trademark Office Society: Award scholarship of $5,000