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PHOTOSYNTHESIS CYLINDER FOR OXYGEN PRODUCTION

Abstract

It's not easy for humans to survive in space for long periods of time. Astronaut take oxygen tanks with them to space; however, these tanks have a lot of problems. They are hard to fabricate, expensive, heavy and Gas cylinders may explode when exposed to high temperature. Our innovation is about a cylinder continuously produces oxygen in a clean way using photosynthesis and plants. It can be used by astronauts, hospitals, and divers. The first step is to choose the perfect plant, snake plant and the money plant were the best suggestions and much research was done to select one. The second step was the step of the photosynthesis process. It is known that if plants were given water, carbon dioxide and light, they will produce glucose and, oxygen. Thus the plant is provided with light from two sources. Solar energy panels were used to generate electricity, so when there is external light, the panels will store energy which it will use it at Night when there is no external light. The third step is choosing the material for the cover of the cylinder. We chose the bulletproof glass because it's the strongest type of glass and the external light can enter through the glass. The fourth step was to choose the type of fertilizer. we decided to use animal waste as it is considered as the best type of natural fertilizer. The fifth step was the watering step as we used the automatic drip irrigation system to water the plant. The sixth step is choosing an oxygen mask for this mask there will be two tubes the first one will enter carbon dioxide from the person to the plant and the other one will get from the plant the oxygen and reach it to the person. The seventh step is the ventilation step, we devised an idea for ventilation with the help of Professor Tawfiq from the United Arab Emirates University. The idea is to have holes for ventilation in the casing that we can shut down whenever we need to use the oxygen in the cylinder. The final step is using an oxygen regulator, it has two properties. First is to calculate the amount of oxygen in the cylinder. Second is to calculate the amount of oxygen leaving the cylinder.