VAYU PURIFIER

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Abstract

Air pollution is a major health hazard affecting the developing and developed countries alike. The effect of air pollution on health is complex and their individual impact varies from one to another. It is not only the ambient air quality in the cities but also the indoor air quality in the rural and urban area that are causing concern. In fact, in the developing world the highest air pollution explosion occurs in indoor environment. The main objective of our project is to reduce the air pollution. We live in a world where everything is transported by the use of vehicles, so it is necessary to have knowledge about vehicle pollution. But before that let us talk about pollution. Pollution is the introduction of harmful materials into the environment. These harmful materials are called pollutants. Similarly, vehicle pollution is the introduction of harmful pollutants into the environment by motor vehicles.To overcome this, we present a solution which prevents pollutants in the air.

1. INTRODUCTION

Air pollution is now one of the major environmental issues. Daily air pollution has a great effect on the health of people. There are many respiratory diseases due to air pollution. People have trouble breathing. Even the main reason for lung cancer is the air pollution. Along with this air pollution also affects our physical organs. Due to breathing in polluted air our health is getting worse every day. Many pollutants go into the from natural sources. These pollutants include dust gases, volcanic ashes, smoke from forest and many other materials. There are several reasons behind the condition increase in air pollution. the first reason is the smoke emanating from transport, which pollutes the atmosphere most. The second reason is the increasing industrialization and smoke coming out of it which pollutes the air. The third reason is that the growing population of humans and the increase in their needs which is the main reason for pollution. Most air pollution made by humans today is because of transportation all type of pollution are connected to the environment, which affect us. To reduce

the level of air pollution we need to make a big change in our activities. To reduce the effects of air pollution we should not cut tree but we should plant more trees. We should use pollution free / smoke free transport. Factories should be established at a distance of residential areas. Therefore, it is the responsibility of all of us that we adopt natural method to play our roles and contribute to keeping the environment clean.

2. RELATED WORK

Research scholars at home and abroad have done a lot of research. Nowadays, indoor air purification technology is mainly divided into two types: capture type and reactive type. The capture type separates the contaminants from the air fluid by filtration or adsorption, leaving the contaminants in the air purifier. The reaction type principle mainly removes gaseous pollutants (molecular type pollutants) in the air by chemical reaction or ionization. Common reaction mechanisms are UV sterilization, photocatalysis and chemical catalysis, room temperature thermal catalysis, plasma and ozone oxidation. However, this purification method is easy to cause secondary pollution. There are three common capture air cleaning systems:

mechanical filtration, electrostatic precipitator (ESP), and hybrid air purifiers (Chan et al., 2015). In 1963, the German Hammer brothers developed the first indoor mechanical filter to remove soot from indoor air. The main components of mechanical filtration (also known as fiber filtration) are fans and filter dust collectors (Klepeis et al., 2017). The built-in fan draws indoor air into the purifier. The particulate pollutants in the air are filtered by diffusion, interception, impact or inertial force. Its filtration efficiency is affected by the structure of the air purifier, the nature of the filter material and the power of the fan. This type of purifier uses a wide variety of filter materials, and the filtration function depends mainly on the nature of the material. Porous filter materials such as nonwovens, filter paper and fibrous materials are most commonly used. The air filter for filtering PM2.5 is usually made of high-efficiency air filter material (HEPA: High Efficiency Particulate Air), and the material is ultra-fine glass fiber or synthetic fiber, which is often processed into paper. As early as the 1940s, the United States developed the earliest HEPA filter in the Manhattan project, which was used to prevent the spread of radioactive pollutants in the air.

3. IMPLEMENTATION

The main objective of our project is to purify air here we use simple components such as cardboard, fan, petrol gel, transparent sheet, exhaust fan Which we use to purify the air. The air enters in to the box through the fan and the pollutants are sticked to the transparent sheet with petroleum gel and the pure air will escape through side window.

Components Required:

• Exhaust Fan

• Petrolleum Jelly

• Cardboard

• Adapter

Pollution has become very common yet serious issue in today's world. It has been there for a long time even before human evolution such as volcanic eruption, wild fire which leads to various photo chemical reactions in the atmosphere. The current concern is that it is raising day by day due to various resources of pollutants and one of the pollutants is human and human created machines.Pollution increases day by day. It leads to global warming, acid rain, various types of pollutions such as air pollution soil pollution water pollution in various. Such as urban community and suburban community. So, we came up with an innovative model called

"VAYU PURIFIER". Its main aim is to purify the air through simple methods which will be discussed later

4. EXPERIMENTAL RESULTS

Our main objective to design this project is to reduce air pollution.

Design contains 4 components, those are petroleum jelly, exhaust fan, cardboard, adapter, here we used a square shape box with cardboards to design the model, front side of the box contains exhaust fan to grasp air from outside and opposite side of the exhaust fan make a hole of square shape then petroleum jelly is applied to its open-end, when air is grasp into the box the pollutants in the air the sticked to the petroleum jelly. Fresh air comes out.
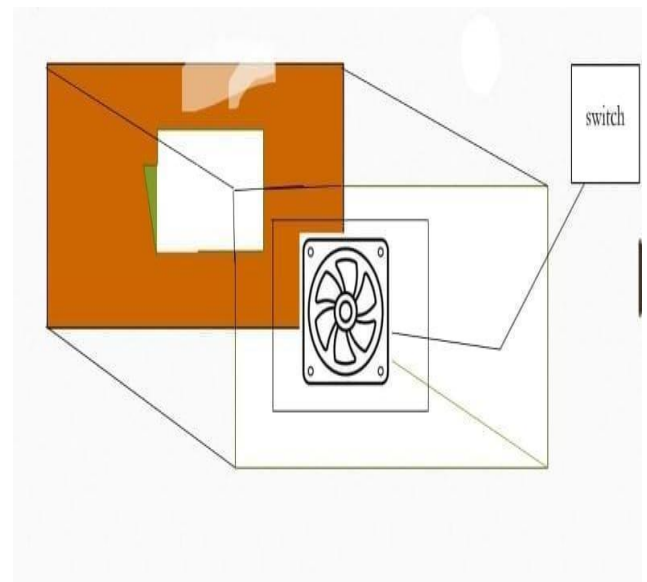
Prototype

5. CONCLUSION

Clean air is not only important, but foremost requirement to all. Indoor air pollution ranks top five public health threats. Air purifiers are deigned to clean the indoor air by particulate matter filtering mechanism like dust, pollen and gaseous pollutants like hydrocarbons. Air purifiers are considered as life savers since many disease occur due to VOC', molds and improper ventilation at home and it reduces carbon dioxide levels in our home. Natural air purifiers include free ventilation to home, avoiding paraffin candles, using air purifier plants can reduce the risk of indoor air pollution. Indoor plants perform the function of natural living air purifiers since the foliage and roots can absorb the chemical pollutants.

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