**ATL MARATHON**

**SWACHHVayu**

**Anti-Air Pollution System**

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**DLF PUBLIC SCHOOL**

**ACKNOWLEDGEMENT**

We would like to express our deep gratitude towards the

‘ATL MARATHON PROGRAM which provided us the

opportunity to carry out this wonderful project.

We would like to thank our parents and school, for providing the

resources and the continuous encouragement required

for this project.

**SINCERELY,**

**TEAM ChangeCreators.**

**THE PROBLEM**

* **Problem Statement 1**

India is one of the countries which has been highly polluted and the many cities rank in top 10 of highly polluted cities worldwide.

Major contributors to pollution around Delhi and Delhi-NCR region are mostly burning of domestic/farm waste and commonly industrial factors.

Therefore, the objective of our prototype is to combat the ongoing problem of air apocalypse.

The present models of air purifiers present in market are only able to purify air up to certain extent by filtering pm2.5 and pm10 but our air contains various disease causing organic and acidic compounds. Also, the present air purifiers are not efficient if kept in open places. More-over as experimented by the government, the standing tower air purifiers has also failed in areas of Delhi.

We achieve the objective keeping in mind the economic factors, mass implementation ideas and the existing market models of air purifier so as to get access to cleaner air.

**METHODOLOGY**

**COMPONENTS REQUIRED**

* **AIR PURIFIER**

1. Medium Sized Cuboidal Structure With 3 Compartments
2. Transparent Pipe
3. Air Pump
4. Plain Water
5. Vinegar
6. Kerosene
7. Caustic Soda – NaOH
8. Bubble Generator

* **ARTIFICIAL INTELLIGENCE FOR AIR PURIFIER**

1. Data from Servers of Air Matters
2. Ubuntu/Windows Platform

**WORKING OF AIR PURIFIER**

1. The impurified air from atmosphere enters the bottle 1 containing plain water using an air pump which cleans the particulate matter from air, since dust particles like pm2.5 and pm10 get dissolved in water.
2. This air now enters bottle 2 which contains vinegar and kerosene. The organic compounds get dissolved either in vinegar or kerosene. There is no fixed ratio of adding vinegar and kerosene in the bottle.
3. Now, the air enters bottle 3 which contains caustic soda (NaOH). The air consists of numerous acidic compounds, caustic soda being a strong base reacts with these acidic compounds causing a neutralising effect resulting in formation of a salt.

* Note: all the bottles contain foam which helps in creation of tiny bubbles, these bubbles are an indication of purification of air.

1. The small-scale model of this would be placed in vehicles and be powered by the vehicle’s batteries.
2. A regulator is present which will regulate the intensity of work done by the pump, the regulator will be commanded by AI.
3. Therefore, wherever the vehicles fitted with air purifiers travel, they will clean the air of that particular area depending on the areas AQI levels

**Impure Air from Atmosphere**

Air Pump

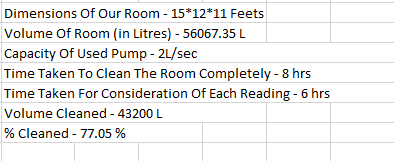
**Pure Air**

**ROLE OF ARTIFICIAL INTELLIGENCE**

**IN AIR PURIFIER**

1. The collected data from the servers will be processed
2. The AI will then use it to predict the areas where AQI levels are likely to rise.
3. The AI won’t only do this, a regulator attached to the air pump, will be controlled by it.
4. The regulator will be switched on the basis of the current AQI where the vehicle will be placed.

**RESULTS OF EXPERIMENTS**

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**A screenshot of a cell phone

Description generated with very high confidence**