Smart Air Purifier

By

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Abstract

Air Quality is one of the most concerning issues nowadays. Especially in Bangladesh, this topic is much more sensitive than in other countries. In 2019, Bangladesh had the worst air quality in the world and it was 165 US-AQI which was referred to unhealthy.[1]

In our home, we typically cannot see the dust. But it reveals when in UV exposure or in Sunlight. The dust we see in sunlight is PM2.5 which causes asthma, cold and cough and various diseases.

An air purifier can resolve this problem in our home but it is not affordable in every home of Bangladesh and here comes the Smart Air Purifier. It can measure the impurity of the air in micro-gram per m^3 and operates the purifier according to the dust level and it is affordable due to its low cost.

In automatic mode, the purifier continuously measures the dust level and runs the purifier when the air quality is unhealthy and turns the purifier off when the air quality is healthy.

In manual mode, one can control the air purifier using an android phone via Bluetooth. The android app also shows the air quality.

The device contains four fans. Two fans in the backside pushes the air through the filter inside the device and other two at the front side lets the air out of the device. The air purifier is an Arduino based device which has two sensors and a printed circuit board. One of the sensors is an optical dust sensor and another one is a humidity-temperature sensor. The dust sensor measures the quantity of the dust and the humidity-temperature sensor measures the temperature and the humidity of a room.

[1] https://www.iqair.com/us/bangladesh