

IOT Based Air Pollution Monitor

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Abstract- pollution is a mixture of solid particles and Air d gases in the air. Car emissions, chemicals from factories, dust, pollen and mold spores may be suspended as particles. Effect of air pollution has many bad things and the others may cause problems to our health, for instance, asthma, cough, and lung disorders. In addition, the pollutant can cause global warming, acid rain, and disturbing plant growth. Basically, a human cannot determine whether the air is good or not. Hence, it is necessary to have a tool that can measure the air quality. The level of pollution is increasing rapidly due to factors like industries, urbanization, increasing in population, vehicle use which can affect human health. IOT Based Air Pollution Monitoring System is used to monitor the Air Quality over a thingspeak using Internet. It will show a graph when the air quality goes down beyond a certain level, means when there are sufficient number of harmful gases present in the air

I. INTRODUCTION

IoT Air Pollution/Quality Monitoring System for monitoring the concentrations of major air pollutant gases. The system uses 3 sensors like PMS5003 PM2.5 Particulate Matter Sensor, MQ-135 Air Quality Sensor, BME280 Barometric Pressure Sensor. In this IoT project,

The sensors will gather the data of various environmental parameters and send to Thingspeak server which displays the data online after the interval of every 15 seconds. We can install this system anywhere and can also trigger some devices when pollution goes beyond some level like we can switch on the Exhaust fan. Air pollution sensors are devices that can detect the presence of air pollution in the surroundings, as the name suggests. The detection is in terms of a ppm value of the pollutants the sensor can detect, and then those ppm values can be used to monitor the environment, based on standard safety values. There are different types of sensors, depending on the usage. The major ones are specialized for one or more of the following components: Ozone, PM, Carbon Monoxide, Sulphur Dioxide and Nitrous Oxide. Our project is a simple demonstration to show that it can be easily done. We have used an MQ135 Gas Sensor, which is sensitive to gases like Ammonia, Benzene and Carbon Dioxide.

II. Review of Literature

India being the fourth largest electrode of greenhouse gases little surroundings makes its time to create peoples attentive to matters Gas sensing and observation refers to the method of ceaselessly pursuit the a in concentration of various air part. There are very less pollution monitoring systems, the systems which are available do not have accuracy & just shows the level of pollution in air.

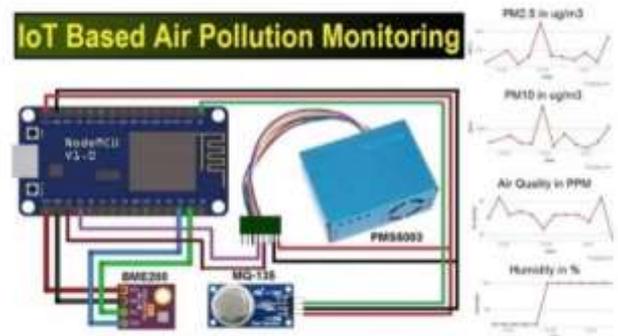
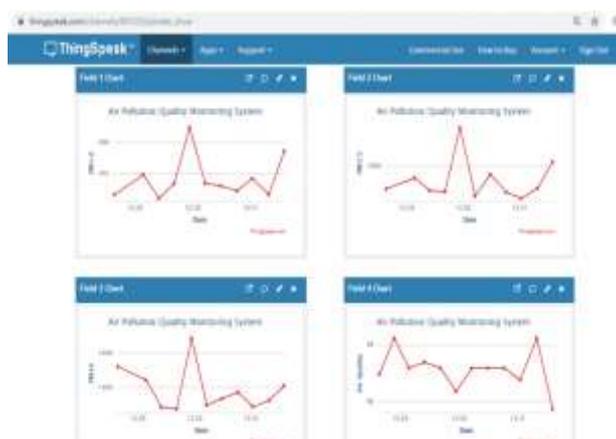
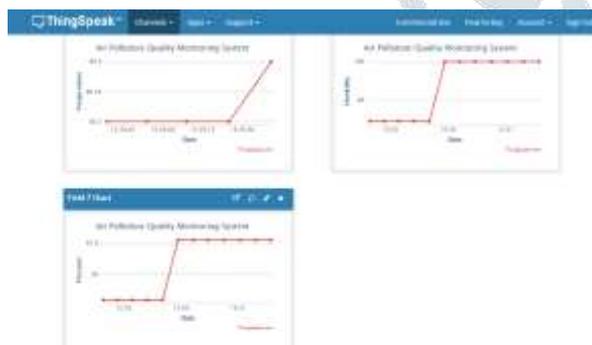
III. Report on the Present Investigation

- Experimental setups, procedures adopted, techniques developed, methodologies developed and adopted.
- While important derivations/formulae should normally be presented in the text of these chapters, extensive and long treatments, copious details and tedious information, detailed results in tabular and graphical forms may be presented in Appendices. Representative data in table and figures may, however, be included in appropriate chapters.
- Figures and tables should be presented immediately following their first mention in the text. Short tables and figures (say, less than half the writing area of the page) should be presented within the text, while large table and figures may be presented on separate pages.
- Equations should form separate lines with appropriate paragraph separation above and below the equation line, with equation numbers flushed to the right.

Above images are the screenshot of the output, the output is displayed on the thing speak website, it is an IoT platform, which helps to display data in graphical format. Above picture displays the temperature humidity, particles in air and pressure.

IV. Conclusions

The research presents to observe the toxicity within the air atmosphere is meant victimization Node MCU, IoT technology is enforced to regulate the air quality. By victimization IoT technology the method of observation the toxicity of air and dominant the assorted gases within the atmosphere is projected during this project. the employment of MQ135 sensing element senses varied venturous gases, particulate sensor & pressure sensor and Node MCU is that the heart of this application, that controls the entire method. Wi-Fi module controls all the method to the web and monitor is employed for displaying all the net pages over the web.



V. Appendix

Detailed information, lengthy derivations, raw experimental observations etc. are to be presented in the separate appendices, which shall be numbered in Roman Capitals (e.g. "Appendix I").

VI. References

Circuit Digest

<https://circuitdigest.com/microcontroller-projects/iot-air-pollution-monitoring-using-arduino>

Research Paper,

<https://www.ijser.org/researchpaper/IOT-Based-Air-Pollution-Monitoring-System.pdf>

IEEE Paper,

<https://ieeexplore.ieee.org/document/8378212>

