IoT Based wireless sensor network for Air pollution monitoring

Now-a-days aerial pollution is a major issue driving attention towards the medical and healthcare department. The neck of air pollution has hyperbolic with times by heap of things just alike the rise in population, hyperbolic vehicle uses, industry & urbanization that fallouts in injurious effects on human eudaimonia by straight moving health of population bare to that. Air purity plays terribly very imperative role in security, health and safety of the manhood. One delinquent is that the deterioration towards air quality in numerous cities in India. The prime contributor for pollution is that the particulate (PM 2.5), inflicting people's health problems, like respiratory disease or different metabolic process diseases. So there's necessity of low price pollution watching system which may be cast-off handily at anywhere.

The main aim of the project is design an air quality monitoring system using arduino UNO and IOT technology. This device has some air quality sensors. We are using PM2.5 or particulate matter in the air with diameter of around 2.5 microns. The MQ-136 is a **Hydrogen Sulfide detection sensor with a sensing range of 1 - 200ppm**. DHT11 sensor is uses to detect the both temperature and Humidity. The MQ-2 is **a smoke and combustible gas sensor from Winsen**. It can detect flammable gas in a range of 300 - 10000ppm .

All these sensors and esp8266 Wi-Fi module is interfaced to the arduino UNO. Arduino uno continuously reads the data from sensors and update them into the thingspeak cloud along with date and time through esp8266 Wi-Fi module. To achieve this task microcontroller loaded program written in embedded C language.

The main objective of this project:

- Real-time air quality monitoring system.
- IOT based wireless monitoring system.
- Using thingspeak cloud to upload the sensor data into the thingspeak cloud.

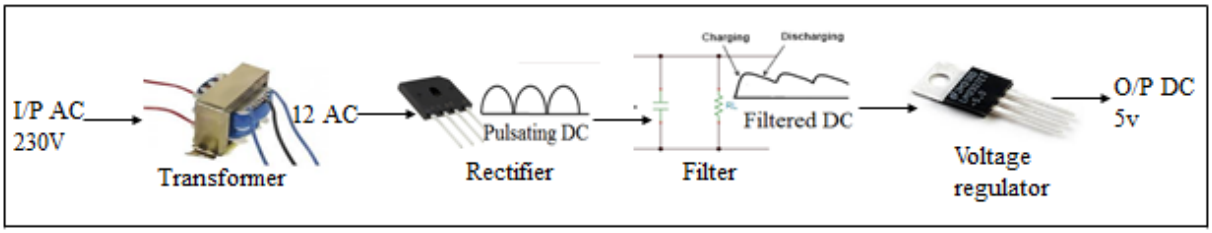
- Using arduino UNO to achieve this task.

The major building blocks of this project are:

Software's used:

1. Embedded C programming.
2. ARDUINO IDE STUDIO COMPILER for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Thingspeak cloud technology.

Regulated Power Supply:



Block diagram:

Block diagram