Date

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PROJECT TITLE: Air quality monitoring

COLLEGE: PERI INSTITUTE OF TECHNOLOGy

DEPt :ELECTRONICs and Communication engineering.

DOMAIN: INTERNET OF THINGS (IOT)

## Submitted by:

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# Phase 1:

# 1.1 abstract

* The system presented in this paper is an advanced real-time air quality reporting system supported by the Internet of Things (IoT) architecture.Air quality in an environment heavily affected by the community's state in a region may affect human, animal, and plant safety. The device can track the air rates of different substances including O3, SO2, CO and particulate matter using sensors. Read the Arduino microcontroller sensor detail. The data sent to the cloud system then accessed the cloud system through a WIFI module on Arduino. The effects of the tracking are available through a cloud Site page. The current model is implemented successfully and can be deployed for real system implementations.

1. 2 INTRODUCTION

* IoT (Internet of Things) has become an integral part of our lives and it has already made an impact in various sectors, including the environment. Air pollution is a severe problem that has been affecting our planet for years. Therefore, there is a need for a reliable and efficient air pollution monitoring system to protect ourselves from its hazardous effects. An IoT-based air pollution monitoring system is an ideal solution that can provide real-time data and insights about the air quality in a particular area.
* An IoT based air pollution monitoring system consists of several hardware and software components that work together to collect and process data. The hardware components include sensors, microcontrollers, and communication modules. The software components consist of a cloud platform, a mobile application, and a web-based dashboard.

1.2. Related Work

* Environmental monitoring practices were checked at home. The author suggests a paradigm for temperature, moisture and light intensity control focused on thecombination of ubiquitous, dispersed sensor systems, data collection knowledge system and background understanding and reasoning[13]. It is rewarding to have accurate sensory knowledge. Several camera devices for environmental control have been introduced recently. Many of the detection devices for tracking CO2 (carbon dioxide) are different. A monitoring system is developed for carbon dioxide levels in remote areas.The machine also monitors the outdoor tracking zone's temperature humidity and light strength. Similarly, the author presents an urban CO2 monitoring system[14]. It runs outside on 100 square kilograms in a metropolitan environment. A low power ZigBee sensor network is suggested to track VOC emissions rates in indoor environments. An indoor and outdoor air quality monitoring system based on WSN is presented. A range of sensors in each node is either hardwired or wirelessly connected to the central control device [15]. A control program for air quality is introduced in real-time. The machine consists of seven sensors that control seven gasses.

1.3. Proposed System

* The device can track the air rates of different substances including O3, SO2, CO and particulate matter through sensors. Read the Arduino microcontroller sensor detail. The data sent to the cloud system then access the cloud system through a WIFI module on Arduino. The effects of the tracking are available through a cloud Site page. The current model is implemented successfully and can be deployed for real system implementations. Figure 1 shows the design of the system. The sensor MQ-7 is used for reading CO concentrations in the soil. An analog sensor is MQ-7. The characteristics of the MQ7 gas sensor include a strong CO, reliable and long service life. This system uses 5V AC / DC heating power supply which uses 5VDC, distance calculation (20-2000 ppm) to test carbon monoxide gas. The analog pin on Arduino is connected in Figure 2 MQ-7. We use a gas sensor as an analog sensor for calculating ozone concentrations in the soil, to calibrate the Ozone levels. MQ-131 operates on a 5V (VCC) power supply attached to a microcontroller-connection VCC board. The output voltage on a sensor would rise as the detector detects the gas in the environment, reducing the gas concentration and deoxidating. The importance of the O3 gas concentrations is determined by the ratio of the sensor's resistance importance to the sensor's resistance when the air is cclean.

1.4 Results

* A system test was carried out from the results of the design that was carried out. The test has been conducted on campus to monitor conditions of air quality on campus. Figure 2 shows the system results of the simulated prototype module A system test was carried out from the results of the design that was carried out. The test has been conducted on campus to monitor conditions of air quality on campus. Data on ozone rates and CO particles were derived from the test results for compounds in the air that were analyzed. Each one minute, the data is obtained in the cloud. One may access the webpages from the internet through the web pages of the channel monitoring.

1.5. Conclusion

* We also created a low-cost surveillance program. The semiconductor gas sensors may be used to track the gas concentrations of the target gas. A device has numerous advantages such as low-cost, rapid response, low maintenances, continuous measurement capacity, etc., using semiconductor sensors. One of the system's key benefits is a compact scale. The WLAN, the network server and the site server Gateway Node are all bundled into one lightweight edition. That is really compact for the device. This device also helps one to incorporate certain hardware components into the controller as a microcomputer of credit scale. Through incorporating further sensing nodes, the network can be updated. This device is valuable due to its comprehensive nature and calculation tests. The system can be rendered as a smart portable tool to track emission