Retraction

Retraction: Air Quality Monitoring System with Emergency Alerts Using IOT (J. Phys.: Conf. Ser. 1916 012050)

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This article (and all articles in the proceedings volume relating to the same conference) has been retracted by IOP Publishing following an extensive investigation in line with the COPE guidelines. This investigation has uncovered evidence of systematic manipulation of the publication process and considerable citation manipulation.

IOP Publishing respectfully requests that readers consider all work within this volume potentially unreliable, as the volume has not been through a credible peer review process.

IOP Publishing regrets that our usual quality checks did not identify these issues before publication, and have since put additional measures in place to try to prevent these issues from reoccurring. IOP Publishing wishes to credit anonymous whistleblowers and the Problematic Paper Screener [1] for bringing some of the above issues to our attention, prompting us to investigate further.

[1] Cabanac G, Labbé C and Magazinov A 2021 arXiv:2107.06751v1
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Air Quality Monitoring System with Emergency Alerts Using IOT

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Abstract. The level of air in a particular region has a very strong effect on the human condition in a section because of the level that will affect the health of living organisms. Therefore, it is necessary to periodically measure air quality conditions in the area. During this study period an IoT-based air quality monitoring system was developed to address air quality conditions in the area. The system can monitor the sensitivity sensors to determine the quantity of many small particles within the air and O₃, SO₂, CO and objects. Studying device information exploits including Arduino microcontroller is being studied. The data is then transmitted directly to the cloud system using a wireless LAN module in Arduino for access to the cloud service. View results are displayed directly on a web page or application provided by the cloud service.

Keywords: Air quality monitoring, Tracking, sensor, Global Positioning System (GPS)

1. Introduction

In this project we've got an inclination to unit of measurement getting ready to produce associate IoT based totally pollution observation System throughout that we'll monitor the Air Quality and trigger a alarm once the air quality goes down on the way aspect a definite level, implies that once there unit of measurement spare amount of harmful gases unit of measurement gift am ong the air like greenhouse emission, smoke, alcohol, hydrocarbon and NH₃. Air Quality as a result of it detects most harmful gases and will live their amount accurately. By this project, users will monitor the pollution level from anywhere victimizing your laptop computer or mobile. We are going to install this method anywhere and will jointly trigger some devices once pollution goes on the way. The varied aspects of air quality monitoring network like that pollutants were ought to be monitored [1]. The legal needs in India for finishing up air monitoring are mentioned. These requirements operate on that objective. Air quality watching air determined [2]
2. Previous Methodology

Environment air pollutants gases problems are overcome by employing a Digital Signal Processing board then executing it to the suggested gas monitoring system. The existing system is high cost, high maintenance charge, slower response time, non-ability to provide real time measurements. In this system a DSP board is connected which helps the system to be used for real time monitoring. The concentration of air polluting gases like carbon monoxide gas, CO2, sulphur dioxide, nitrogen dioxide is measured by this system. This system needs many fields works to extend accuracy level, temperature sensor. Also, this technique can follow the norms with IEEE 1451 standard and will incorporate IEEE 1451.5 standard. Wireless Sensor Network Pollution Monitoring System is employed to watch pollution in Maldives. This technique was implemented by using wired technology, wired sensors and wires were deployed in large numbers round the Island. Recursive Converging Quartiles algorithm is used for data fusion and it eliminates duplicates, by removing all wrong readings ultimately which helps in saving energy [3-6]. The grain went into sleep mode during idle time. This technique is less effective in monitoring high risk regions in all countries. The outcome of this technique is to produce low quality results. Results are not accurate and fine. In this Air quality monitoring system sensor technology is efficiently used. In this system Oxygen measuring sensor, carbon monoxide gas measuring sensor, CO2 measuring sensor were used. consistent with the result electrochemical Carbon monoxide sensor inhibits linearity against the concentration range. During this work calibration results from different air quality measuring sensors were provided which is not accurate. Response of sensor is inversely proportional to size of sensor. just in case of carbon monoxide gas sensors as size increases sensitivity also become worse than previous. The results of this technique is proposed to develop correction and manual calibration techniques to deduce the important gas concentration within the actual deployment.

3. New Methodology

We recommend an air quality method because it detects very harmful gases and can live up to its value accurately. you will monitor the level of pollution from any abuse of your laptop or cell phone. we will install this process anywhere and together we can create a specific device when the pollution goes to the far side at a certain level. This IoT-based air quality monitoring system with emergency warning is designed to detect air quality conditions at any concentration or local area and provide a notification. The system will continue to monitor air quality using the sensors to detect the number of several airborne substances including O3, Sox, CO2 and particulate. Arduino microcontroller is used to read sensory data. The data is then sent to the cloud system using the WIFI module in Arduino for access to the cloud service. Monitoring results will be visible through an online page provided by the cloud service [7 - 10]. Figure 1 shows the Block Diagram.
Figure 1. Block Diagram

4. Advantages of This System

1. Air Quality maintenance, because it detects most harmful gases continuously and may live their quantity accurately
2. Useful for people located in industrial Areas
3. Capable of sensing Air Quality for 5kms
4. Fully automated process, no manual interruption.
5. Monitor the pollution level of any victimisation place from your laptop or mobile.
6. Get Emergency alert to mobile
7. Application suggests whether it’s suitable to climate

5. Equipment and Methodology

**Hardware:** Arduino UNO, 16X2 Character LCD, Wi-Fi Module, MQ Sensor (MQ-135), Power Supply GPS Module.

**Software:** TerraTerm, Think Speak, Arduino IDE, Python IDE, VS editor.
6. Working

The design and implementation of the IoT based air quality monitoring system with emergency alerts based on GPS tracking system and air quality sensor is explained below. Figure 2 shows the Working

1) The GPS module placed continuously monitors the location.
2) Once the air reaches the sensor it will indicate in LCD display
3) The user is travelling is continuously monitored by the GPS and they are checked simultaneously.
4) If the air quality is too polluted user gets the emergency alert 5, Each sensor works within a certain range.

![Figure 2. Working](image)

7. Conclusion

We studied and presented a novel approach for air quality monitoring systems with emergency alerts. To develop a IoT based system that continuously monitor the pollution level in the air and give a notification when air pollution reaches a specified border level for a healthy life of peoples and sometimes safeguard the peoples from death and serious diseases. To checks the air quality and detects most harmful gases accurately like greenhouse gas, smoke, alcohol, aromatic hydrocarbon NH3, Nitrogen oxide (NOx), Carbon dioxide (CO2), Sulphur oxide (Sox) and dioxins. To monitor the pollution level of any victimization place from your laptop or mobile. To install this technique anyplace and may conjointly trigger some device, once pollution goes on the far side some level. To safeguard peoples from various health diseases, cancers and respiratory infections that are caused due to air pollution.

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