GAS LEAKAGE MONITORING AND ALERTING SYSTEM

TEAM MEMBERS:

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OBJECTIVES

To Detect the leakage of toxic gas and to trigger an alert system to activate the safety precautions using IoT devices and cloud services.

The system comprises of sensors for detecting gas leak interfaced to microcontroller that will give an alert to user whenever there is a gas leakage with exact location details. It also allows to monitor the gas levels continuously using the web UI.

INTRODUCTION

Internet of Things aim towards making life simpler by automating every small task around us. Safety has always been an important criteria while designing home, buildings, industries as well as cities. The increased concentration of certain gases in the atmosphere can prove to be extremely dangerous. As much is IoT helping in automating tasks, the benefits of IoT can also be extended for enhancing the existing safety standards.This system is not only capable of detecting the leakages and hence presence of excess amounts of harmful gases and alerting through audible alarms but also, with the help of IoT, alerting the concerned authority about the condition before any mishap takes place through a personal message over the internet using cloud services.

The Gas Leakage Detector System also sends the sensor reading to cloud so that the user can continuously monitor the sensor data and analytics could be carried out on the readings for increasing the precision of the system. A web UI will be developed to display the sensor data continuously where the user can monitor the sensor data.

LITERATURE SURVEY

[1]

TITLE: Gas Leakage Detection System using IoT with integrated notifications using Pushbullet-A Review.

AUTHOR: M Athish Subramanian, Naveen Selvam, Rajkumar S, R Mahalakshmi, and J Ramprabhakar

This paper reviews the previous state of art and also have proposed a gas leakage detection system using MQ5 gas sensor and Arduino Uno controller is incorporated with a cloud storage for data collection and also used for storing and analysing data. Gas leaked is converted from Parts per Million (PPM) to volts through the Arduino IDE and results in notifying the user when the threshold limit is crossed. The user is alerted via an application for quick notification through the internet and also through a buzzer /LED for physical notification. The prime novelty of the proposal may be claimed as the usage of cloud storage for detection and notification. The system, though is simple and straight forward, can be very efficiently used for domestic purpose.

[2]

TITLE: Gas Leakage Detection Based on IOT

AUTHOR: Suma V, Ramya R Shekar, and Akshay Kumar A

The main idea of this paper is to carry out the literature review on IoT based gas detection techniques and to ensure the safety of people and surroundings. By presenting a simple yet reliable system, gas leakage detection system using MQ5 gas sensor and Arduino uno controller is incorporated with a cloud storage for data collection and also used for storing and analysing data. Gas leaked is converted from Parts Per Million (PPM) to volts through the Arduino IDE and results in notifying the user when the threshold limit is crossed. The user is alerted via an application for quick notification through the internet and also through a buzzer /LED for physical notification.

[3]

TITLE: LPG Gas Leakage Detection Using IOT

AUTHOR: Arun Manhas, Neeraj Chambyal, Manish Raina, Dr. Simmi Dutta

This paper provides a brand new approach to discover LPG discharge supported microcontroller based Node MCU. To alert on Liquefied rock oil Gas (LPG) leakage and preventing any unwanted incident, we need to apply some cautions to discover the discharge. This paper aims to provide a solution to this problem by building a

device which will do the area monitoring continuously. The gas sensor provides data to Node MCU, and then the results are displayed as a warning to the user via an Android-based smart-phone device. Other than LPG gas, Air conditioner and refrigerator leaked gases are also harmful in home. Using this device users will be able to prevent accidents that occur due to harmful gas leaks so that accidents can be avoided

[4]

TITLE: Internet of Things (IOT) Based Gas Leakage Monitoring and Alerting System with MQ-2 Sensor

AUTHOR: Rohan Chandra Pandey, Manish Verma, Lumesh Kumar Sahu

This work modifies the existing safety model installed in industries and this system also be used in homes and offices. The main objective of the work is designing microcontroller based toxic gas detecting and alerting system. The hazardous gases like LPG and propane were sensed and displayed and notify each and every second in the LCD display. If these gases exceed the normal level then an alarm is generated immediately and also an alert message (Email) is sent to the authorized person through the INTERNET and used ARM development board. The advantage of this automated detection and alerting system over the manual method is that it offers quick response time and accurate detection of an emergency and in turn leading faster diffusion of the critical situation.

REFERENCES

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[3] Arun Manhas, Neeraj Chambyal, Manish Raina, Dr. Simmi Dutta LPG Gas Leakage Detection Using IOT.

https://www.researchgate.net/publication/354309093_LPG_Gas_Leakage_Detection_Using_IOT

[4] LPG Gas Leakage Detection Using IOT Internet of Things (IOT) Based Gas Leakage Monitoring and Alerting System with MQ-2 Sensor.

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