DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

GAS LEAKAGE MONITORING AND ALERTING SYSTEM FOR INDUSTRIES

LITERATURE REVIEW

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ABOUT THIS PROJECT..

This project helps the industries in monitoring the emission of harmful gases. In several areas, the gas sensors will be integrated to monitor the gas leakage. If in any area gas leakage is detected the admin will be notified along with the location.

LITERATURE REVIEW

1)

TITLE: Smart Gas Leakage Detection with Monitoring and Automatic Safety System

YEAR: 2019

AUTHOR: S.M. Zinnuraain, Mahmudul Hasan, Md. AkramulHakque, and Mir Mohammad NazmulArefin

Published in: International Conference on Wireless Communications Signal Processing and Networking (WiSPNET)

METHODOLOGY:

This paper proposed a leakage detection with monitoring and automatic safety system that efficiently monitors the amount of gas (LPG) consumed and also alerts the user when abnormal amount of gas is released. The system was primarily built using Arduino Mega 2560, Node MCU 8266, temperature & humidity sensor and MQ-2 gas sensor. And a mobile application is created connecting the electronic circuit, which can be installed in the users mobile to get alarm when needed. The circuit also has an LCD display built in which shows the amount of gas consumed by displaying its temperature, weight and humidity. The proposed system has two sub systems embedded on, one for monitoring the gas consumption and another for detecting the gas leakage. The main drawback of this system may be considered as the space the circuit covers.

Though the circuit is wirelessly connected to the mobile application, the area that the circuit covers is comparable to the gas source.

2)

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

YEAR: 2020

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

Published in: Fourth International Conference on Inventive Systems and Control (ICISC)

METHODOLOGY:

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.

3)

TITLE: FPGA-GSM based Gas Leakage Detection System

YEAR: 2016

AUTHOR: Arpitha .T,Divya Kiran, V. S.N. Sitaram Gupta and PunithavathiDuraiswamy

Published in: IEEE Annual India Conference (INDICON)

METHODOLOGY:

This paper proposed a leakage detection method in which the leakage information is sent to first response team through wireless media which ensures preventive actions immediately even in the absence of people onsite. The detection system uses FPGA to detect the leakage and automatically initiate a warning call through a GSM. The experimental results show that the system is able to detect the leakage in less than a minute. The main disadvantage of the proposal is that the system is very costly and cannot be afforded by small scale enterprises who work with LPGs. Secondly, the system needs a signal conditioning circuit which is very huge and its dimensions are even comparable to the whole circuit.

4)

TITLE: Gas Leakage Detection Based on IOT

YEAR: 2019

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

Published in: 3rd International conference on Electronics, Communication and Aerospace Technology (ICECA)

METHODOLOGY:

This paper proposed a system that monitors the level of LPG in the household cylinder and notifies the gas agency when needed for a refill and secondly it also detects the gas leakage and alerts the user via SMS. The system efficiently uses WIFI, IOT, gas sensors and Arduino. And an LCD display, in addition, is used to display the weight of the gas. The architecture and operation of the system is quite simple. Yet the system can be highly effective for domestic purpose.

REFERENCES

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