"Gas Leakage Detector Using Ardiuno with Sms Alert"

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ABSTRACT
The Gas leakage is the biggest problems faced in industrial sector, residential areas and gas driven Vehicles like CNG (Compressed Natural Gas) buses, cars etc. One of the method to stop accidents related with the gas leakage is to mount a gas leakage detection device at unprotected places. The system detects the leakage of the LPG using a MQ-5 gas sensor and uses the GSM to alert the person about the gas leakage via SMS. When the LPG in air increases to a particular level, the gas sensor senses the gas leakage and the output of the sensor is detected. The detection is done by the MQ-5 gas sensor, through the Arduino And result will displayed on LCD simultaneously. User receives the alert SMS message to mobile phone.

Keywords: Arduino, GSM Module, MQ5, Buzzer,LCD display

I.   INTRODUCTION:
Many accidents is faced in day to day life like explosion because of Gas leakage. Huge damage is caused, if gas leakage is not detected early. We can detect the gas leakage using t MQ5 gas sensor. In this Gas leakage detector, we use GSM module and MQ5 gas sensor which is connected as input to Arduino. The gas leakage detector systems can be installed in resiedental areas, hotels using Arduino. In this gas detector system senses the gas leakage using MQ5 gas sensor. . This device will continuously monitor the level of gas present in the air. While monitoring, if the value of gas in air is within the set limit then the result will be displayed on LCD simultaneously An alert message is provided to the user by sending an SMS on mobile number. If this gas is leaked in our kitchens, hotels or factories and not sensed.In time ,it may lead fire accident ,and may cause human and material Loss.
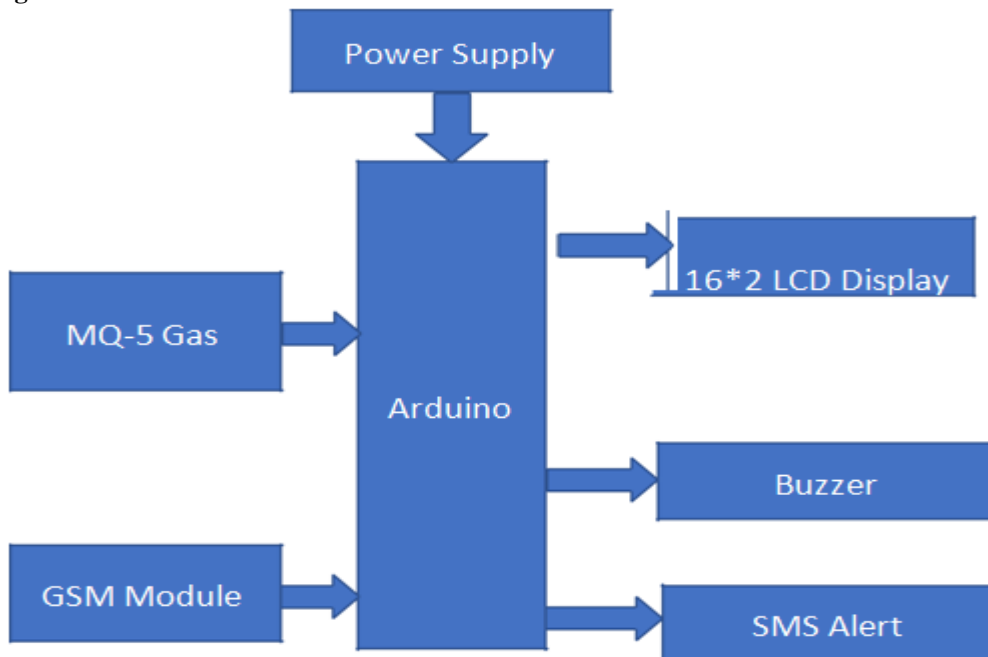
Literature Review:

Sr no	Author Name	Year	Title of Paper	Work/Result
1	M Athis Subrmania. Naveen Selvam. S Rajkumar. R Mahlakshmi.	2020	Gas Leakage Detection System Using IOT with Integrated notifications.	To ensure saftey Of people and surrounding. By presenting simple but reliable system.

2	Rhonnel S. Paculanan, Israel Carino	2019	LPG Leakage Detector using Arduino with SMS Alert and Sound Alarm	This device will continuously monitor the level of LPG gas present in the air.
3	M Choche, A Yadav, M Shelke…	2021	IOT based Gas leakage Detection System	Gas leakage detector to overcome life risks
4	SSS Subri, NM Zaki, R Ramli - Jurnal Sains Sosial dan	2021	LPG Gas Leakage Detection and Monitoring System	Microcontroller based gas leakage detection with SMS alert and automatic locking system

II.   METHODOLOGY:

In Gas Leakage Detector System MQ 5 gas sensor is given as input to Arduino . GSM 800L SIM Is also given as input to aurdino in which the SIM card is inserted to receive SMS alert on mobile Phone. Here 16*2 LCD display acts as an output whose wires are connected to aurdino Digital Pins.The Buzzer acts as an output which produces the Beeping sound when Gas is Detected. When MQ 5 senses the Gas the LCD dipaly displays the message at output and Buzzer starts Beeping. When the Gas around the sensor reduces the buzzer stops beeping and LCD diplay Message as output.
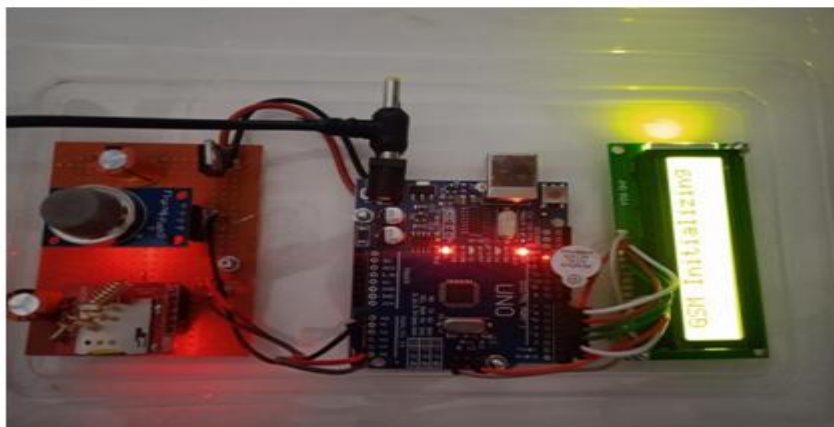
Block Diagram :

Working Principle

This System provides quick response and reduce the critical situations that can be faster than manual than the manual methods. This circuit mainly uses MQ 5 Gas sensor and GSM module to detect the Gas leakage and send the message to a mobile with Alert message.

The MQ 5 Gas sensor and 800L GSM module are connectedTo the analog pins input to Arduino Board. MQ 5 is connected to analog Pin- A1and GSM module is connected to Pins -A4,A5. They are mounted on zero PCB.

The output provided through Arduino Board.Here 16*2 LCD display and Buzzer is connected to Digital Pins.Buzzer is mounted at Pin Ground and Pin-13. 16*2 LCD display is mounted At Pin no-2,3,4,5,6,7 to Display message.

When power supply is ON then Mq5 Gas sensor senses the Gas leakage and immediately then the Buzzer starts beeping The message is displayed on the 16*2 LCD Display along that an alert message is also Sent on Mobile phone about the Gas Leakage.

III.   RESULT

IV. FUTURE SCOPE

This Gas Leakage Detector System is useful in every field. It is used to prevent the accidents caused due to this Leakage and save human lives. It can be used in various industries, Hotels, during Functions, for Household Purposes etc.

V. CONCLUSION:

"The Gas Leakage detector with SMS Alert" will help in preventing any danger caused by gas leakage and is useful in preventing any danger caused by Gas Leakage and ensure the safety to avoid the gas leak that can cause harmful result . It will also assure the safety of all users.

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