

# LPG/CNG Gas Leakage Detection Based on Iot

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**Abstract:-** Gas spillage prompts different mishaps bringing about both material misfortune and human wounds. The danger of blast, terminating, suffocation depend on their actual properties such poisonousness, combustibility, and so forth. The quantity of passings because of blast of gas chambers has number of passings has been expanded lately. To dodge this issue there is a requirement for a framework to distinguish the spillage of LPG. Gas spill recognition is the way toward distinguishing conceivably unsafe gas spills by methods for different sensors. A few plans of LPG discovery and ready framework have been proposed in the writing. Apeh et al. planned kitchen gas spillage discovery and programmed gas shut off framework. T.Soundarya et al. introduced the chamber LPG gas. In this our research paper, we have proposed a LPG/CNG GAS LEAKAGE DETECTION BASED ON IOT. AS we know that because of more demand and use of LPG, our proposed system would be very helpful to monitor the usage of LPG on a daily basis and to alert us about any hazards and big damages that may happened due to LPG leakage. We have made a framework that advise the client of the measure of LPG left so that suitable measures can be taken.

As we probably are aware LPG is an exceptionally unsafe and inflammable gas, and the framework we have made it additionally used to caution the client with their disturbing capacity when there is spillage of LPG so that actions are taken to dodge a blast. LPG leakage is detected by our system with the help of gas sensor via SMS. When the concentration of LPG in air increase to a certain level, then after the gas leakage system of the controller is detected and measured by the leakage detector in which many of the electrical devices are like LED, buzzer and microcontroller are fixed. And the notification is delivered to the user, notify through an SMS to the verified mobile number.

## I. INTRODUCTION

Liquefied Petroleum Gas is nonrenewable source of energy in short form it is called as LPG. LPG is made up with the mixture of propane gas and butane gas and the which is generated after the process is smell like odorless and colorless. liquified petroleum gas (lpg) which is used in every sector like hotel, hostel, hospital, cafeteria, it is also used for industries based purposes. This is also used for cutting objects and welding purposes and the main advantages of lpg and cng gas are such gases are ecofriendly. because of Gas leakage many accidents happened and their result shows as both material, products loss and human injuries.

When lpg leakage is occurred many dangerous situation can happen like toxic gas, explosion risk, suffocation on the physical properties based. as we had seen numbers of deaths rate increased in recent years due to lpg leakage. So this lpg gas spillage framework is exceptionally useful to fix this spillage of lpg issue with the assistance of this framework we can distinguish the spillage of LPG without any problem. The principle motivation behind our framework and this paper is to distinguish the gas spillage in houses, lodgings and other homegrown territories with the assistance of gas discovery sensor. after identifying the spillage warning will conveyed to the client on their checked portable number to alarm clients. in our framework GSM modem is utilized to inform the client about the gas spillage by sending SMS cell phone and alarm individuals at home by initiating Buzzer, show the message on LCD.

### ➤ Problem formation

Gas leaks lead to various hazards that lead to them both property loss and personal injury. The danger of explosions, shootings, sneezing are derived from them physical properties such as toxins, burns, etc. The death toll from a gas explosion cylinders have been on the rise in recent years. The reason for such explosions is because of the low level cylinders, old valves, worn controls and deficits awareness on the handling of electric cylinders. LPG or Propane is a flammable mixture of hydrocarbon gases used as fuel in many systems such as homes, hostels,

factories, cars, cars because of its desirable areas of inclusion high calorie content, less smoke, less smoke, and minor damage to the environment. Natural gas some of the most widely used fuel in homes. Both of these gases burns produce pure energy, but there is 1096 E. Jebamalar Leavline. The big problem their reward. Heavy air, these gases are not easily dispersed. It can lead to congestion when inhaled and can lead to explosion. As a result of the LPG explosion, the death toll has risen sharply recently years. To avoid this problem you need to system to detect LPG leaks. Gas leaks to identify a potential identification process dangerous gas leaks through various sensors. Several LPG detection projects and a warning system proposed in the literature. Apeh et al. gas leak detection in the kitchen as well automatic gas shut-off system. UT.Soundaryaet al. introduced LPG cylinder gas leak detection system. Wireless gas and GSM machines have been proposed. This paper provides a leak detection detection system and LPG awareness to avoid fire hazards and to provide safety in homes. Some papers are arranged like this. Section 2 presents the LPG leak detection again the warning system and Section 3 concludes the paper.

## II. LITERATURE SURVEY

“LPG/CNG GAS LEAKAGE DETECTION BASED ON IOT” “The main aim of our project is to detect LPG leakage using gas sensor and notify the user with the help sending sms to alerts the people.in this paper we have puts our main focus on our safety. Generally fire mishaps show up because of awful lovely elastic cylinder utilization or when the controller is presently not developed to become off appropriately. The stockpile of fuel from controller to burner is left on even after the controller is turned off. By some coincidence, if the handle become on, it would outcome in the fuel spills. This paper helps in the headway mechanical ability that is identified with gas detecting, checking and oversee device of LPG spillage. Another venture where the proposed model portrays a small versatile robot which is fit to distinguish a spillage in dangerous spots and when spillage is recognized it consequently sends warning. However, the task is created in android application for android based PDAs and sends warning through Bluetooth. In 2014 the investigation of Tanvira Ismail et al on GSM Based Gas Leakage Warning System where they have the target in distinguishing the spillage of LPG gas, educating the client about the spillage regarding gas by means of SMS, actuating the caution unit to advise neighbors and turning on the fumes fan as an essential preventive measure against gas spillage and killing fundamental force. The solitary contrast in the examination is that turning off the primary force is done after the gas spillage.

Home fires have happened again and again threat to human lives and infrastructure growth in recent years. Liquid petroleum gas (LPG) is very fragile and can burn even in some distance from the leak source. Most fire hazards are created due to the low level The rubber tube or controller is not turned off when not in use. Therefore, to improve gas leakage the warning system is very important. So, this paper provides gas leak warning system to detect gas leaks and shocking riders. Keywords: Liquid petroleum gas, Gas sensor, Leakage. LPG reward and awareness detection system presented in this section is as simple as shown in Figure 1, but reliable. Battery is used again hence the material. It is designed in such a way that can also work with the power supply of ac. Ku to support the final case, it can repair the bridge with a capacitor filter. This is followed by controller designed for IC7805 provides + 5V power control. Getting an LPG, Gas MQ-6 sensor used. This sensor can be operated at + 5V. Sensitivity of this sensor it is very high and has a quick response time. It can find LPG torture in grade 200-10000ppm. The gas sensor layer of this sensor made of Tin Dioxide (SnO<sub>2</sub>) and gold (Au) electrodes. A gas sensor output is provided The LM358 is a dual amplifier where available compared to the boundary value of the gas quantity set using reset potentiometers reset enlarged. If the audible voltage is greater than to set the preset threshold, the operating amplifier fire extinguisher in the driver region of the gas leak detection system and BuzzerLPG / CNG vehicles, small factories. When you find it, the automatic switch closed. Gas leaks and accidents have led to disaster at a huge loss over the years. So it is it is important to detect any gas leaks and prevent them any risks. So here we propose a system that detect LPG / CNG gas leakage conditions again provide a security warning to target users. We suggest building a system using MQ6 gas sensor to find and connect to the Atmega 328 microcontroller and LCD Display. Ours the system uses a gas sensor to detect any gas leakage.

## III. BLOCK DIAGRAM

Our investigation suggestion contains most of the important gadgets, list of them is squares AVR microcontroller, GSM module, MQ3 buzzer, this gas sensor activate the mode when gas leakage is happening and alert people while emergency situation is about to happen

## IV. OBJECTIVES

This detecting system is very simple alerting system . we can operate this system by battery and hence portable. And also this system can be operated support the latter case, it has a bridge rectifier with a capacitor filter. This is followed by a regulator designed with IC7805 which provides +5V regulated power supply.

**VII. CONCLUSION**

At the end we all have mean and understand that this system is very important and must be used in every house that all beloved family members of a family being safe and lead happy life . And so our main aim is to offer everyone to avoid such accidents by using this lpg detector we can save many life though this system whenever leakage take place we can easily notify by the sensor by sms on our smartphones. So essentially it is beneficial project.

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**V. WORKING PRINCIPLE**

The functionality In this system we use two gas sensor where one system is placed near the LPG cylinder and another is placed distance from the cylinder.delivering to the Arduino controller resistance of the sensor decreases and alert system of the machine gets activate. So leakage can be controlled by the user when they get notification.

ON two level of gas leakage is divided, i.e LOW and HIGH. The system which is placed near the cylinder and detect gas leakage means low level and when system is placed far away from given cylinder and system and also high level of leakage means, and low level notification of leakage is delivered to the user and activate LCD, the buzzer and also in the high level message of leakage is send to the neighbors and department of fire.

**VI. MERITS AND DEMERITS**

Merits:-

1. available price is low
- 2.consumption of power is very low
3. High accuracy
4. sensitivity of the gas sensor is excellent.

Disadvantages

- 1.This kit alert us about leakage but cannot prevent fire.
- 2.This Applicable only as an indicator/alarming device.
3. it as also sensitive to smoke.

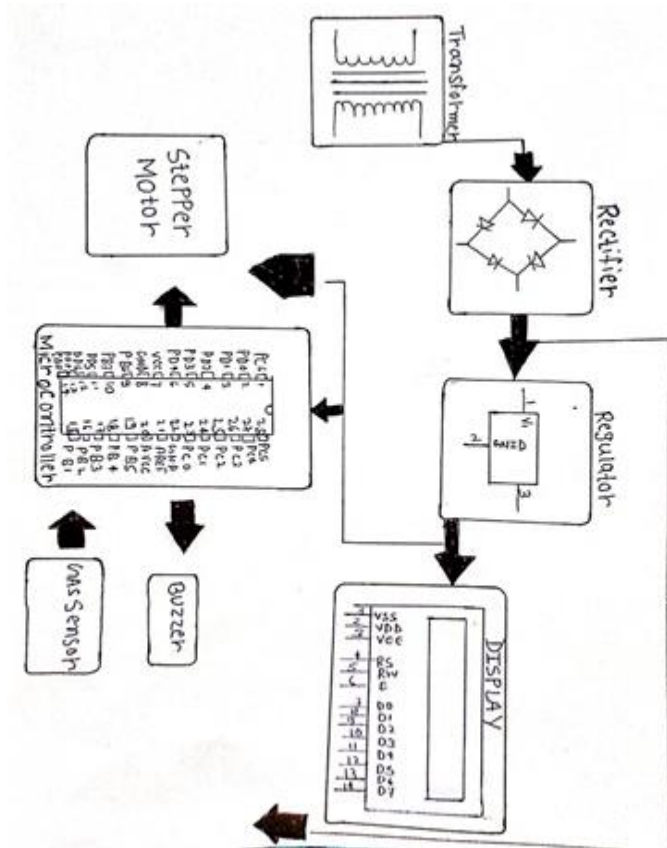


Fig 1:- Block diagram setup circuit