



## GAS VANISHER

<sup>1</sup>K.RAVIKIRAN, <sup>2</sup>B.ARCHANA, <sup>3</sup>G.KARTHIK REDDY, <sup>4</sup>R.SAI CHARAN, <sup>5</sup>G.SAHITHI

<sup>1</sup>Assistant Professor, Dept. of ECE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

<sup>2</sup>Assistant professor, Dept. of CSE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

<sup>3</sup>Assistant professor, Dept. of ECE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

<sup>4-5</sup>B-TECH, Dept. of AIML, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

### Abstract

Now a days we are seeing that many fire accidents are taking place in households. This results in the threat to human lives, property and sometimes lead to loss of lives. Most fire accidents are caused because of poor-quality rubber tube or the regulator is not turned off when not in use. Due to busy life's, people are neglecting the safety precautions in the household. The Liquid Petroleum Gas (LPG) is highly inflammable, it is the source for fire accident. Even people are not able to detect the gas released in small quantity and that leading to the major accident. This problem can be solved with the help of technology. The main aim of the model is to minimize the risk of fire accident by taking precautions when there is a detection. Our model presents a Gas Leakage Alert System to detect Gas leakage and to alert people with the buzzer in house and to send message to the user regarding gas leakage through GSM module. If the user isn't nearby the house and want to take precautions for not causing any accidents this model will be very useful. The gas leaked is sent out of the house with the help of the exhauster fan when the gas is leaked. So in this way precautions are taken and we are reducing maximum risk factor of fire accidents due to gas leakage. Hence this helps the people to find the Gas Leakage and can protect themselves and property by taking the precautions instantly.

**Keywords:** LPG Gas, GSM module, Gas Leakage Alert System, Exhauster.

### 1. INTRODUCTION

LPG consists of mixture of gases like propane and butane. These gases can catch fire easily. LPG is used as propellant, fuel and as a refrigerant. When a leak occurs,

the leaked gases may lead to explosion.

The number of deaths occurring due to explosion of gas cylinders has increased. So, the leakage should be controlled to protect people from danger. Bhopal gas



tragedy is an example for accidents due to gas leakage. Gas leakage detection is not only important but controlling the leakage is also important. Liquid petroleum gas is generally used in houses and industries. In homes, LPG is used mainly for cooking purpose. This energy source is primarily composed of propane and butane which are highly flammable chemical compounds' leaks can happen, though rarely, inside a home, commercial premises or in gas powered vehicles. Leakage of this gas can be dangerous as it enhances the risk of explosion. An odorant such as ethanethiol is added to LPG, so that leaks can be detected easily by most people. However, some people who have a reduced sense of smell may not be able to rely upon this inherent safety mechanism. In such cases, a gas leakage detector with gsm module messages becomes vital and helps to protect people from the dangers of gas leakage. A number of research papers have been published on gas leakage detection techniques. In this project, advanced gas leakage detection technology is used.

## 2. RELATED WORK

As per our survey, in our world a lot of fire accidents are taking place due to the leakage of gas in households and in industries. Approximately per year 10,000

people are passing away in our world. The device which is used to detect the gas is already present the market which is widely used in many places like industries where there is plenty of chances of the explosion which may lead to massive destruction and the loss of man power; in homes, where the LPG gas used most widely in our daily necessity where it can detect the leakage of LPG gas; in cars, where most of the vehicles contains the cylinder and many more places. Dr. Walter Snelling was the first to introduce LPG gas in 1910. It's a blend of butane and commercial propane. It is very combustible, and numerous accidents occur as a result of LPG leaks. As a result, it is necessary to identify and prevent gas leakage. Gas Detectors can be classified in a variety of ways. They're divided into categories based on the type of gas they detect, the technologies that power the sensor's output, and the components that impact the sensor's operation (semiconductors, oxidation, catalytic, photoionization, infrared, etc.). In our daily lives, we utilize a variety of gadgets for various purposes, and the majority of them have the ability to emit any type of gas or chemical when in operation in the air. In many scenarios, it is difficult for human to keep an eye on the levels of the concentration of the leaked



gas or to detect whether there is leakage of gas or not.

### 3. IMPLEMENTATION

Our Problem statement is to detect gas leakage in households with the help of Gsm Module and when there is gas leakage automatically exhauster fan will be switched on using relay.

The project seeks to follow the following steps:

To design a device to detect gas leakage for household's people.

Prove that the following in reality expands the proficiency impressively.

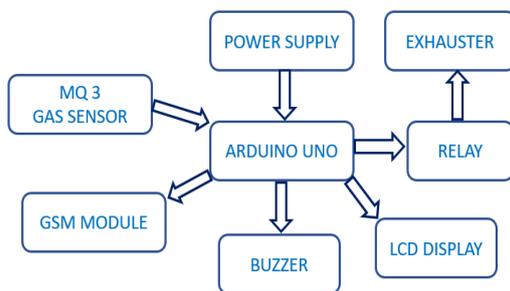
The aim of this GAS LEAKAGE DETECTORS is to ensure that the Gas leakage happened or not. The device should give an alert to the user on the gas leakage. With this device people can able to understand whether the gas leaked or not and can follow the precautions to protect the lives. This plays a key role to the household people to avoid the accidents due to the gas leakages. The gas vanisher is our project which helps to exhaust gas outside. The main aim of our project to do home automation. When the gas is released the gas sensor will detect the gas and it passes the information to Arduino and buzzer will on the sound. If the gas leaks continues then it passes the information to Arduino and passes the

information to gsm module and gsm module sends the information to the user that gas leaking and exhauster fan will be on. With span of time gas will be removed from room and this is our project works. The aim of this GAS LEAKAGE DETECTORS is to ensure that the Gas leakage happened or not. The device should give an alert to the user on the gas leakage. With this device people can able to understand whether the gas leaked or not and can follow the precautions to protect the lives. This plays a key role to the household people to avoid the accidents due to the gas leakages. The aim of this GAS LEAKAGE DETECTORS is to ensure that the Gas leakage happened or not. The device should give an alert to the user on the gas leakage. With this device people can able to understand whether the gas leaked or not and can follow the precautions to protect the lives. This plays a key role to the household people to avoid the accidents due to the gas leakages.

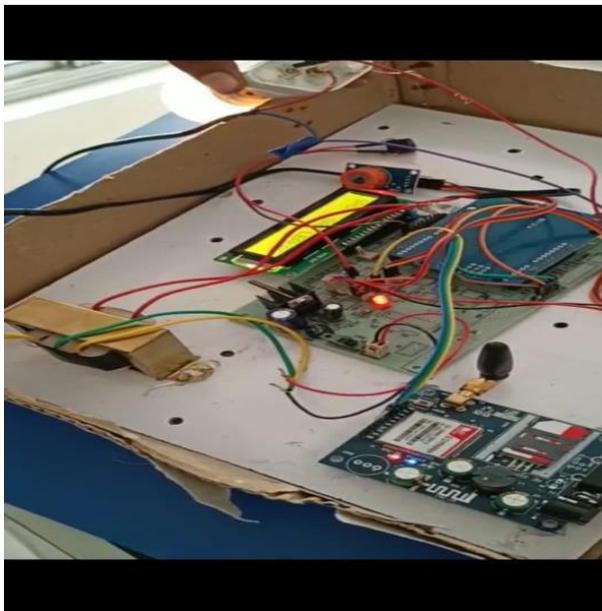
### 4. EXPERIMENTAL RESULTS

The gas vanisher is our project which helps to exhaust gas outside. The main aim of our project to do home automation. When the gas is released the gas sensor will detect the gas and it passes the information to Arduino and buzzer will on the sound. If the gas leaks continues then it

passes the information to Arduino and passes the information to gsm module and gsm module sends the information to the user that gas leaking and exhauster fan will be on. With span of time gas will be removed from room and this is our project works.



### Block Diagram



### Working Model

#### 5. CONCLUSION

With early detection of leaks on gas cylinders system using Arduino based

MQ-3 sensors, we can conclude: \*In the MQ-3 sensor-based LPG gas leak early detection system using Arduino it has been successfully running according to an algorithm that has been designed and installed before in the test results and send a warning message to the specified number. This system can detect gas faster in a closed room, on the contrary if in an open room the sensor can detect longer because the level of contaminated gas will be immediately wasted into the air. This application system is only a prototype and has not yet been tested for accidental leakage of LPG gas cylinders in relevant agencies which can cause explosions and fires.

#### 6. REFERENCE

1. D Lakshita&Somantri Y., 2018, Wireless Sensor Network on LPG Gas Leak Detection and Automatic Gas Regulator System Using Arduino. IOP Conference Series: Materials Science and Engineering. 384. 012064. 10.1088/1757-899X/384/1/012064.  
[https://www.researchgate.net/publication/326350308\\_Wireless\\_Sensor\\_Network\\_on\\_LPG\\_Gas\\_Leak\\_Detection\\_and\\_Automatic\\_Gas\\_Regulator\\_System\\_Using\\_Arduino/](https://www.researchgate.net/publication/326350308_Wireless_Sensor_Network_on_LPG_Gas_Leak_Detection_and_Automatic_Gas_Regulator_System_Using_Arduino/) accessed on August 26, 2019



2. Republika. (2018, January 17).

Republika. Retrieved Augustus 3, 2018,  
from Republika:

<https://www.republika.co.id/berita/koran/ekonomi-koran/17/01/18/ojz2k5-konsumsi-elpijimeningkat>

3. K Medilla&Firdaus, Firdaus&Yulianto, Andik& K Syakban, 2018, Early detection of LPG gas leakage based Wireless Sensor Networking,

[https://www.researchgate.net/publication/323451555\\_Early\\_detection\\_of\\_LPG\\_gas\\_leakage\\_ba](https://www.researchgate.net/publication/323451555_Early_detection_of_LPG_gas_leakage_ba)

sed\_Wireless\_Sensor\_Networking/

accessed on August 26, 2019

4.[https://www.researchgate.net/publication/326350308\\_Wireless\\_Sensor\\_Network\\_o](https://www.researchgate.net/publication/326350308_Wireless_Sensor_Network_o)

n\_LPG\_Gas

\_Leak\_Detection\_and\_Automatic\_Gas\_Regulator\_System\_Using\_Arduino/

5.[https://www.researchgate.net/publication/323451555\\_Early\\_detection\\_of\\_LPG\\_gas\\_leakage\\_ba](https://www.researchgate.net/publication/323451555_Early_detection_of_LPG_gas_leakage_ba)

sed\_Wireless\_Sensor\_Networking/

6.[https://www.academia.edu/16157642/ADVANCE\\_TECHNOLOGY\\_GAS\\_LEAKAGE\\_DETE](https://www.academia.edu/16157642/ADVANCE_TECHNOLOGY_GAS_LEAKAGE_DETECTION_AND_CONTROL_SYSTEM/)

CTION\_AND\_CONTROL\_SYSTEM/

7.

<https://www.ijraset.com/fileserve.php?F>

ID=9021

8. table-1.6\_1.pdf