

# LITERATURE SURVEY

**TOPICS :** Implementation of Ammonia Gas Leakage Detection & Monitoring System using Internet of Things.

**AUTHORS:** J. Vijayalakshmi, G. Puthilibhai,  
S.R.Leoram Siddarth.

**YEAR:** 2019

**DESCRIPTION:** The Internet of things is the way we connect various components with internet connectivity and achieve communication. This paper implements the ammonia gas leakage detection via a monitoring system with the help of ammonia gas sensor (MQ135), using the concept of the Internet of Things. Ammonia Gas sensor (MQ135) sense and detect a large amount of ammonia gas present in the lab, industries, factories, health care etc. High concentration of Ammonia results in blindness, lung damage or death. Whenever ammonia gas reaches a threshold level provided in the MQ135 Sensor, the buzzer in the Ammonia Gas Sensor goes off alerting the officials. The Electrochemical principle on which the system operates. Electrochemical sensors measure the partial pressure of gases under atmospheric conditions.

The ambient air is monitored and diffused with the help of a membrane by the liquid electrolyte in the sensor. The system we implement collects data about the various levels of ammonia gas at various times daily and also it is possible to generate graph whenever is needed with the data sense. This paper implements the use of a gas monitoring system in labs to detect the ammonia levels present in the air, processed and notified through the Internet Of Things.

**PROS:**

- Prevent the accidents earlier are using MQ-137 Sensors.
- The model we propose is much cheaper and efficient

**CONS:**

- Precaution steps are not possible.
- No alert notification.
- Long monitoring time.

**TOPIC:** LPG Monitoring and Leakage Detection System.

**AUTHORS:** Unnikrishnan.S., Razil, M., Benny, J., Varghese, S., & Hari, C. V.

**YEAR:** 2019

**DESCRIPTION:** In this paper, they have proposed a Liquefied Petroleum Gas (LPG) monitoring and leakage detection system. With the large demand and use of LPG, this system would be helpful to monitor the usage of LPG on a regular basis and to alert about any hazards that may occur due to LPG leakage. We have designed a system that alerts the user of the amount of LPG left so that appropriate measures can be taken. Since LPG is a highly hazardous and inflammable gas, we have also designed a system to alert the user with an alarm when there is a leakage of LPG so that measures are taken to avoid an explosion. Index Terms—Liquefied Petroleum Gas, Hazards, Monitoring, Leakage Detection.

**PROS:**

- It displays “GAS LEAKAGE” in the LCD screen at the time of LPG leakage.

**CONS:**

- Increased use of LPG has also led to a rise in LPG related hazards.

**TOPIC:** Portable Gas Detection Device With Warning System

**AUTHORS:** Tarun Joseph, Kirti Tyagi, Dr. Y.S. Rao

**YEAR:**2019

**DESCRIPTION:** Liquid Petroleum Gas (LPG), Natural gas or Carbon monoxide(CO) are one of the most commonly used gases in households as well as industrial applications. However, they are also the reasons for accidents caused due to negligence and explosions causing damage to life and property. The mishaps occurring due to negligence can be easily avoided by intimating the concerned personnel before hand. Internet of Things (IoT) combines various technologies to augment our lives. This paper proposes a portable gas detection system which is rechargeable and will continuously monitor the surrounding for unexpected presence of dangerous and harmful gases and immediately alerts the user of the leakage through a buzzer and notification on his android phone.

Index Terms—LPG, CO, Natural gas, Butane, Portable, Alert, IoT, MQTT, Android Application

**PROS:**

- It is a compact
- battery operated
- easy to use device which requires one time installation