Gas Leakage Monitoring & Alerting System for Industries

TEAM MEMBERS: -

Prasanna Venkatesan S

Ramki S

Nithish Kumar M P

Sangameshwaran R

LITERATURE SURVEY: -

Shital Imade Published on “International Journal of Innovative Research & Studies 2022”. The Internet of Things aims to simplify life by automating all of the little tasks that we encounter. As much as IoT aids in task automation, its advantages can also be extended to improve current safety requirements. IoT has not been immune to the fundamental worry of any project, safety. Gas leaks can be fatal and harmful, whether they occur in open or closed spaces. Despite their high level of precision, conventional gas leak detection systems overlook a few important aspects in warning the public of a leak. In order to create a Gas Leakage Detector for society that has Smart Alerting Techniques that involve text messaging the appropriate authority, we used the Internet of Things (IoT) technology.

Rajat Kumar Dwibedi published on “International Conference on Recent Advancements in Engineering and Management (ICRAEM-2020) 2022”. The usage of gas detectors includes the detection of combustible, flammable, and dangerous gases as well as oxygen loss, as well as the detection of other contaminants and gas leaks. It issues a warning sound and directs users to evacuate the area where the leak is occurring. The system that is being proposed is designed, constructed, and includes an SMS warning system for gas leak detection. Industrial plants and refineries have recently adopted infrared imaging sensors for a variety of purposes.

Arun Manhas Published on” INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH IN SCIENCE AND TECHNOLOGY 2021”. In the modern world, safety is crucial, hence it is essential that effective safety procedures be put at place in workplaces and educational institutions. This study alters the current safety paradigm that is utilised in industries and can also be found in residences and commercial buildings. Installing a gas leakage detector at sensitive spots is one of the preventive steps to minimise the risk brought on by gas leakage. A gas detector is a tool that checks for the presence of gases in a space, frequently as a safety measure. Operators in the vicinity of the leak can be alerted by a gas detector, giving them the choice to rectify the problem or leave. This kind of gadget is crucial since.

Sejal Shah published on “International Conference on Advances in Science & Technology (ICAST2021) 2021”. In our daily lives, fuels, gases, etc. are used in a variety of places like homes, businesses, etc. But if not used properly, it can have serious consequences. In the past, it was frequently the only factor in accidents. The goal of this project is to identify a gas leak and avoid the accident and blocking of gas leaks in susceptible regions. Included in this is the MQ6 gas sensor, which may also be used to detect other gases such as LPG, i-butane, hydrogen, methane, smoke, and alcohol. It is used to detect gas leaks in homes and businesses. However, it does not specify the precise gas concentration. Only the trend of gas concentration within a reasonable error range is shown. This gadget automatically takes safety measures.

Dr.Suma Christal Mary published on “International Journal of Psychosocial Rehabilitation 2021”.The proposed gas spillage identification and checking framework was developed as a result of the considerable problem that gas spillages provide for families. There are many methods available for making a Gas Refill reservation, including online and telephone reservations. The scenario will be challenging for someone who consistently utilises LPG gas for cooking. The purpose of this article is to provide a new system that automatically reserves a cylinder at the time of gas discharge by sending a notification to the gas office via WiFi and Internet of Things. Additionally, a sensor is used to detect gas leaks at home.

B. F. Alshammari published on “Eng. Technol. Appl. Sci. Res., 2020”. The design of an industrial monitoring system using the Internet of Things is presented in this study (IoT). Information from the gas sensor (MQ-5) is uploaded to a data cloud. Under the majority of atmospheric circumstances, the sensor can identify gas leaks. An Arduino (UNO-1) that serves as the setup's main processor controls all of the components. The alert is triggered in the form of a buzzer as soon as the sensor detects a gas leak. This alarm is supplemented by an LCD that shows the leak's position, alerts the viewer, and turns on the exhaust fan in that region to remove the gas leak.

Dr. Chetana Tukkoji Published on “International Journal of Engineering Applied Sciences and Technology 2020”. This study offers a novel method for discovering Arduino-based microcontrollers that allow LPG discharge. We must exercise some caution in order to find the discharge in order to warn on Liquefied Rock Oil Gas (LPG) leakage and avert any unpleasant incident. If there is a gas leak, an Arduino-based LPG gas detection alert can be constructed. The MQ6 LPG detector is an accurate LPG sensing device that measures signal strength. The non-inheritable electrical signal is successfully quantized using a cost-effective Arduino-based signal processing technique. Based on square measure, the severity of the LPG leakage is divided into three categories: LOW, MEDIUM, and HIGH.

Sayali Joshi Published on “International Journal of Scientific Research in Science and Technology 2019”. The Internet of Things (IoT) is a network of devices, cars, and home appliances that includes hardware, software, actuators, and a network, allowing them to communicate, work together, and exchange information. IoT entails extending the Internet's network beyond regular devices like desks, workstations, smartphones, and tablets to any variety of typically unintelligent or web-unaware physical objects and everyday objects. These devices are equipped with innovation, allowing them to communicate and connect over the Internet, as well as be monitored and managed from a distance. The convergence of multiple breakthroughs, ongoing research, AI, wearable sensors, and implanted frameworks has expanded our understanding of what the Internet of Things is. Traditional sectors of built-in frameworks, remote sensor networks, computerised control frameworks (including house and building mechanisation), and others all.

V Suma Published on “3rd International conference on Electronics, Communication and Aerospace Technology (ICECA) 2019”. Gas leaks are a major issue in homes and other places that use household gas, which is why the proposed gas leakage detection and monitoring system was created. There are numerous ways to make a Gas Refill reservation, including online and telephone reservations. The situation will be challenging for someone who frequently cooks with LPG gas. This paper's goal is to introduce a novel system that automatically reserves a cylinder when the gas is about to run out by sending a notification to the gas company through wifi using an Internet of Things approach. Additionally, sensors are utilised to find gas leaks in homes. If a gas leak is automatically detected, an SMS will be sent to the user.

Sanjoy Das published on “International Journal of Scientific Research & Engineering Trends 2018”. in order to serve as a detection and warning system. LPG is a major and efficient fuel that is typically used for cooking in private spaces. LPG is often stored in solid, easily-damaged cylinders that are fully loaded. Anyhow, if the gas cylinder, controller, and gas pipe tube are in poor condition and could result in an accident, breakage could occur. Mistakes could lead to physiological issues like asphyxia and could have an effect on how a fire or an electric supply starts. Installing gas leakage detectors in sensitive locations is one of the crucial preventive measures to stop accidents caused by gas spills.