LITERATURE REVIEW

TOPIC: LPG Gas Leakage Detection and Alert System (2017)

AUTHOR: E. Jebamalar Leavline, D. Asir Antony Gnana Singh, B. Abinaya, H. Deepika.

DESCRIPTION: Home fires have been taking place frequently and the threat to human lives and properties is growing in recent years. Liquid petroleum gas (LPG) is highly inflammable and can burn even at some distance from the source of leakage. Most fire accidents are caused because of a poor-quality rubber tube or the regulator is not turned off when not in use. Therefore, developing the gas leakage alert system is very essential. Hence, this paper presents a gas leakage alert system to detect the gas leakage and to alarm the people onboard. Gas leakage leads to various accidents resulting in both material loss and human injuries. The risk of explosion, firing, suffocation is based on their physical properties such toxicity, flammability, etc. The number of deaths due to explosion of gas cylinders has been increasing in recent years. The reason for such explosion is due to substandard cylinders, old valves, worn out regulators and lack of awareness in handling gas cylinders. The LPG or propane is a flammable mixture of hydrocarbon gases used as fuel in many applications like homes, hostels, industries, automobiles, vehicles because of its desirable properties which include high calorific value, less smoke, less soot, and meagre harm to the environment. Natural gas is another widely used fuel in homes. Both gases burn to produce clean energy, however there is a 1096 E. Jebamalar Leavline. et al serious problem of their leakage. This paper presents a LPG leakage detection and alert system to avoid fire accidents and to provide house safety. The rest of the paper is organized as follows. Section 2 presents the LPG leakage detection and alert system and Section 3 concludes the paper.

TOPIC: GAS LEAKAGE DETECTION AND SMART ALERTING (2018)

AUTHOR: K. Manichandana, Simrah UmmeRuman, Harshavardhini Biderkota, Ms. Pr Anisha, Dr.BV Ramana Murthy, and Mr. C Kishore Kumar

DESCRIPTION: Safety plays a major role in today's world and it is necessary that good safety systems are to be implemented in places of education and work. This work modifies the existing safety model installed in industries and this system can also be used in homes and offices. There have been many incidents like explosions of fire due to gas leakage. Such incidents can cause dangerous effects if the leakage is not detected at an early stage. The main objective of the work is designing microcontroller based toxic gas detecting and alerting system. The hazardous gases like LPG and propane if sensed should be displayed and notify each and every second in the LCD display. If these gases exceed the normal level, then an alarm is generated immediately and also an alert message is sent to the authorized person through the INTERNET. IOT technology offers the possibility to transform agriculture, industry, and energy production and distribution by increasing the availability of information along the value chain of production using networked sensors. Through IOT, internet has now extended its roots to almost every possible thing presents around us and is no more limited to our personal computers and mobile phones. Safety, the elementary concern of any project, has not been left untouched by IOT. The

system consists of gas detector sensors, Arduino board, ESP8266 and Cloud server. Sensors will sense the value per time and the system will send the values to cloud server and the server will check if the sensor values have increased the threshold value. If sensor value crosses the limit the server will send the command to hardware for buzzing the alarm. Server also sends the notification message to the user.

TOPIC: Automatic Gas Leakage Detection and Prevention System (2019)

AUTHOR: Gukan.A, Arunprabu.K. B

DESCRIPTION: The current problem in gas leakage detection systems is not in proper conditions. It doesn't have a prevention system. In Existing, the gas leakage systems used in hospitals at the time of firing it only detects and keeps on alarming to evacuate people form the danger zone, it doesn't close the valve automatically, this can cause fire to be spread in all over the area in a instance of time. To Overcome this, we have designed a robotic drive which is capable of detecting the gas leakages in pipelines and it will detect the leakage and automatically closes the valve by using Arduino controller. Since, we are using GSM Module for communication the gas leakage is communicated to the authority via SMS, as soon as the alarm will rang and LED Display shows the leakage point to the control room.

TOPIC: Gas Leakage Detection and Smart Alerting System Using IOT (2018)

AUTHOR: Shital Imade, Priyanka Rajmanes and Aishwarya Gavali .

DESCRIPTION: Internet of Things aim towards making life simpler by automating every small task around us. As much is IoT helping in automating tasks, the benefits of IoT can also be extended for enhancing the existing safety standards. Safety, the elementary concern of any project, has not been left untouched by IoT. The traditional Gas Leakage Detector Systems though have great precision, fail to acknowledge a few factors in the field of alerting the people about the leakage. Therefore, we have used the IoT technology to make a Gas Leakage Detector in Smart Alerting techniques involving sending text message to the concerned authority and an ability performing data analytics on sensor readings. Our main aim is to detect the harmful gases in environment and alerting to the society member through alarm and sending notification