V.S.B ENGINEERING COLLEGE, KARUR

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IBM NALAIYA THIRAN

LITERATURE SURVEY

TITLE : Gas Leakage Monitoring and Alerting System

DOMAIN NAME : Internet of things

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ABSTRACT

In today's world, every home is provided with separate LPG connection for cooking. Nowadays, due to the advancement in technology human beings are getting upgraded day by day. In today's world, every home is provided with separate LPG connection for cooking. It increases the efficiency and decreases the time consumed. Even though it is much better, there are certain critical conditions are to be considered when leakage occurs. While operating with LPG, risks are considered and a reliable technique is to be adapted in the kitchen. Many techniques are available to provide constant monitoring and control of gas leakage in residencies. This paper describes one such method of utilizing LPG in home safely and automatic turning off of the valves at the time of leakage. In this paper, I have used Arduino UNO to carry out the desired task. Arduino is connected to gas sensor (MQ-2) and temperature sensor (LM-35). Gas sensor is used to detect leakage of gas and temperature sensor is used to detect temperature constantly. In addition to that, I have used a PIR sensor for detecting the presence of human in the kitchen. If no human is detected over a period of time, an alarm is on and automatically the valve of the LPG cylinder goes off.

Introduction

The Internet of Things is an emerging topic of technical, social, and economic significance. Consumer products, durable goods, cars and trucks, industrial and utility components, sensors, and other everyday objects are being combined with Internet connectivity and powerful data analytic capabilities that promise to transform the way we work, live, and play. Projections for the impact of IoT on the Internet and economy are impressive, with some anticipating as many as 100 billion connected IoT devices and a global economic impact of more than $11 trillion by 2025. The Internet of Things (IoT) is an important topic in technology industry, policy, and engineering circles. This technology is embodied in a wide spectrum of networked products, systems, and sensors, which take advantage of advancements in computing power, electronics miniaturization, and network interconnections to offer new capabilities. The large-scale implementation of IoT devices promises to transform many aspects of the way we live. For consumers, new IoT products like Internet-enabled appliances, home automation components, and energy management devices are moving us toward a vision of the "smart home'', offering more security and energy efficiency. IoT systems like networked vehicles, intelligent traffic systems, and sensors embedded in roads and bridges move us closer to the idea of "smart cities'', which help minimize congestion and energy consumption. 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

Literature Survey

The author describes [1] describes that 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. LPG 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 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.

The author [2] describes that This paper provides a brand new approach to discover LPG discharge supported microcontroller based Arduino. To alert on Liquefied rock oil Gas (LPG) leakage and preventing any unwanted incident, they need to apply some cautions to discover the discharge. It can be developed associate degree Arduino based LPG gas detector alarm, if gas leakage happens. The LPG detector MQ6 is associate degree correct LPG sensing device that acquires the signal intensity. Associate degree economical Arduino based signal process mechanism is followed that effectively quantizes the non-inheritable electrical signal. The intensity of the LPG leakage is classed into 3 categories, such as LOW, MEDIUM and HIGH based on square measure. This paper conjointly shows the ratio and temperature over the alphanumeric display. The importance and connection of the paper is very beneficiary for man as a result of it's a vital cautions for our domestic life.

The author [3] describes Explosion occurred due to gas leaks have become a serious problem in our day to day lives. Home safety has become a huge problem due to increasing gas leak accidents. Many fire truck accidents are caused by poor-quality used rubber-tubes or shutting off the regulators when not in use. That's is why developing a gas leak detection system is very good objective and necessary. The survey states that any gas leak in LPG occurs so care should be taken as to how the gas leak detection system is used in safety systems in various automation and how the necessary safety can be taken to prevent an explosion of LPG.

The author [4] describes 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.

References

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