

INTERNET OF THINGS

GAS LEAKAGE MONITORING AND ALERTING SYSTEM

Team members

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LITERATURE SURVEY

Survey 1:

Shital Imade, Priyanka Rajmanes, Aishwarya Gavali, and Prof. V. N. Nayakwadi; proposed by the Internet of Things aims to make life simpler by automating every small task around us. As much as IoT helps in automating tasks, the benefits of IoT can also be extended to enhancing the existing safety standards. Safety, the elementary concern of any project, has not been left untouched by IoT. Gas Leakages in open or closed areas can prove to be dangerous and lethal. The traditional Gas Leakage Detector Systems though have great precision, fail to acknowledge a few factors in the field of alerting people about the leakage. Therefore They have used IoT technology to make a Gas Leakage Detector for a society that has Smart Alerting techniques involving sending text messages to the concerned authority and the ability to perform data analytics on sensor readings. Their main aim is to propose a gas leakage system for a society where each flat has gas leakage detector hardware. That will detect the harmful gases in the environment and alerting to society members through the alarm and sending notifications.

Survey 2:

Prof. M.Amsaveni, A.Anurupa, R.S.Anu Preetha, C.Malarvizhi, M.Gunasekaran; their research paper on “GSM based LPG leakage detection and controlling system” the leakage of LPG gas is detected by the MQ-6 gas sensor. Its analog output is given to the microcontroller. It consists of predefined instruction set. Based on this, the exhaust fan is switched on. So, the concentration of gas inside the room gets decreased. Then, the stepper motor is rotated thus closing the knob of the cylinder. Because of this process, the leakage of gas is stopped. The relay is switched to off the power supply of the house. The buzzer produces an alarm to indicate the gas leakage. Then, the user is alerted by SMS through the GSM module. They proposed their methodology that the system takes an automatic control action after the detection of 0.001% of LPG leakage. This automatic control action provides a mechanical handle for closing the valve.

Survey 3:

Pal-Stefan Murvaya, Ioan Sileaa, 2008, they told in their survey on gas leak detection and localization techniques various ways to detect gas leakage. They introduce some old or new techniques to detect the gas. The proposed techniques in this paper are nontechnical methods, and hardware-based methods which include acoustic methods, optical methods, and active methods. In their survey they told a wide variety of leak-detecting techniques is available for gas pipelines. Some techniques have been improved since their first proposal and some new ones were designed as a result of advances in sensor manufacturing and computing power. However, each detection method comes with its advantages and disadvantages. Leak detection techniques in each category share some advantages and disadvantages. For example, all external techniques which involve detection done from outside the pipeline by visual observation or portable detectors are able to detect very small leaks and the leak location, but the detection time is very long. Methods based on the mathematical model of the pipe have good results at high flow rates while at low flow rates a mass balance-based detection system would be more suitable. This disadvantage is prone to disappear for some of these techniques due to forthcoming technological advancements.

Survey 4:

Asmita Varma, Prabhakar, and Kayalvizhi Jayavel; IoT is an expanding network of physical devices that are linked with different types of sensors, and with the help of connectivity to the internet, they are able to exchange data. Through IoT, the internet has now extended its roots to almost every possible thing present 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. Gas Leakages in open or closed areas can prove to be dangerous and lethal. The traditional Gas Leakage Detector Systems though have great precision, fail to acknowledge a few factors in the field of alerting people about the leakage.

Survey 5:

Ch. Manohar Raju and N. Sushma Rani, 2008, they introduce an android-based automatic gas detection and indication robot. The proposed prototype depicts a mini mobile robot that is capable to detect gas leakage in hazardous places. Whenever there is an occurrence of gas leakage in a particular place the robot immediately read and sends the data to android mobile through wireless communication like Bluetooth. We develop an android application for android based smartphones that can receive data from robots directly through Bluetooth.

Survey 6:

Sayali Joshi, Uma Karanje, and Shital Munjal; The Internet of things (IoT) is the system of gadgets, vehicles, and home machines that contain hardware, programming, actuators, and network which enables these things to the interface, collaborate and trade information. IoT includes broadening the Internet network past standard devices, for example, work areas, workstations, cell phones, and tablets, to any scope of the generally stupid or non-web-empowered physical device and ordinary articles. Installed with innovation, these gadgets can convey and connect over the Internet, and they can be remotely observed and controlled. The meaning of the Internet of things has advanced because of the union of numerous innovations, ongoing examination, AI, ware sensors, and implanted frameworks. Conventional fields of installed frameworks, remote sensor systems, control frameworks computerization (counting home and building mechanization), and others all add to empowering the Internet of things. A gas spill alludes to a hole of petroleum gas or a different vaporous item from a pipeline or other regulation into any territory where the gas ought not to be available. Since a little hole may steadily develop a hazardous convergence of gas, spills are perilous. Notwithstanding causing flame and blast dangers, holes can slaughter vegetation, including huge trees, and may discharge amazing ozone-harming substances into the environment.