Gas Leakage Detection System with SMS Alert and Sound Alarm

A Capstone Project

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By

Jennifer A. Taata

Maridel G. Quijano

Mariel T. Ombrete

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ABSTRACT

Liquefied Petroleum Gas (LPG) has become a very common source of cooking fuel at home. However, LPG leakage poses a serious threat to the user and others. To avert the danger associated with the use of LPG at home, this system was developed so that gas leakage can be quickly detected and notification of the user is immediately carried out. A global system for mobile (GSM) communications module is used to send SMS to the user if gas leakage is detected and the status is displayed on a Liquid Crystal Display (LCD). The Arduino Uno microcontroller carries out all the processing of the data received from the MQ6 gas sensor and activates the GSM Communications module and LCD to inform the user. To make the system very efficient it was configured to detect gas leakage at 10 parts per million (ppm) which is far less than the standard 100ppm and it was designed to be powered by means of a rechargeable battery.

Prototyping method was used in the development of this project because this method best fit our project. It utilizes the cycle build, test and rework until the desired prototype function is perfected. The project is designed to automatically detect gas leakage specifically Liquefied Petroleum Gas which is commonly used nowadays as cooking fuel. It detects leakage through the use of the MQ6 Gas sensor and warns the user through a sound alarm and text message whenever a gas leak occurs. Test results carried out on the system were satisfactory indicating that it can be successfully deployed for domestic use.