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Fire and Gas Accident Avoider System

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Abstract - The main aim of this project is to monitor for liquid petroleum gas(LPG) leakage to avoid fire accidents, providing house/industry safety feature where the security has been an important issue. The "fire and gas accident avoider system" detects the LPG leakage using a gas sensor, and this system detects the flames by a flame sensor that alert the consumer about that event with GSM module.If due to gas leakage, any fire accident occurred, then the flame sensor will send an alert to the microcontroller and that information also send to the user through GSM module. Any number of consumer mobile number are included while programming the microcontroller in Embedded C language, to which SMS must be send about the gas leakage and fire accident details.The software program for the proposed system is written in the Embedded C language.The fire and gas accident avoider system using GSM system is used to detect any fire, smoke or gas leakage in any premises, building or industry This project is used as a security system in applications like homes, hospitals, hostels, industries. Because of its low power consumption, reliability, portability this system used in other applications like smoke detection. It is very useful in house for detecting LPG gas, which can cause huge loss of property & life.

***Keywords*- Fire avoider, Gas avoider, GSM, Embedded systems etc.**

I. INTRODUCTION

In this system, we are going to give a brief explanation on how to implement "Fire and gas accident avoider System using GSM". The main aim of this project is to monitor for liquid petroleum gas (LPG) leakage to avoid fire accidents, providing house/industry safety feature where the security has been an important issue. The system detects the LPG leakage using a gas sensor and a flame sensor that alerts the consumer about the gas leakage by sending SMS with the help of GSM module which is connected pre-programmed microcontroller. When the LPG concentration in the air exceeds the certain level, the Gas sensor detects the leakage and then it immediately alerts the consumer by sending SMS to specified mobile phone and alert the people at home by activating the Buzzer alarm and display the message on the LCD display simultaneously to take the required action.

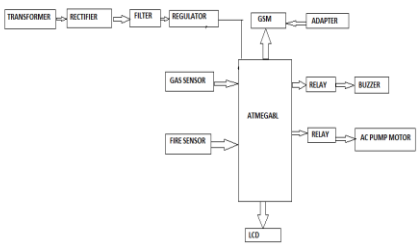

Fig.1 Block Diagram.

II. WORKING

System smartly avoids fire as well as accident from by detecting fire and gas leakages and taking measure to avoid any accident from happening. The system consists. of fire and gas sensors for detection purpose. If system detects a gas leakage the gas sensor detects the leakage and also the system sends information of this event to the authorized user through an SMS message using GSM modem. Now the system also has a fire sensor to detect fires.

Then it immediately alerts the consumer about this event and also the ac pump motor on and water are dropped on that fire Also it sends information of this event to the authorized user, so user can take necessary action urgently. If due to gas leakage, any fire accident occurred, then the flame sensor will send an alert to the microcontroller and that information also send to the user through GSM module. Any number of consumer mobile number are included while programming the microcontroller in Embedded C language, to which SMS must be send about the gas leakage and fire accident details. The software program for the proposed system is written in the Embedded C language.

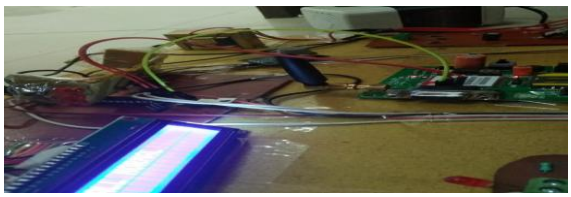

Fig.2 Normal condition.

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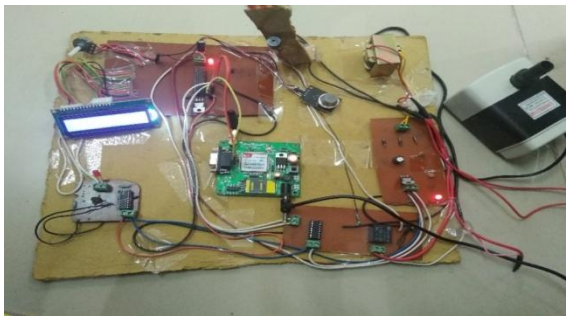

Fig.3 Gas detection.

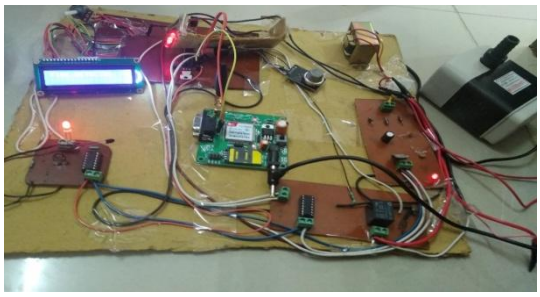

Fig.4 Fire detection.

1. Advantages: -The best way to make use of our technical knowledge is to wed our theoretical concepts with practical applications. Our project has numerous applications which provides an avenue to fire and gas accident in regard to the following-

- The Home and Industry Safety using Fire and Gas Detection using GSM system is used to detect any fire, smoke or gas leakage in any premises, building or industry.
- It is used for detecting any leakage of gas or smoke due to fire or any chemical reaction. Here some of the real-time applications are given below.
- This project is used as a security system in applications like homes, Hospitals, hostels, industries.
- Because of its low power consumption, reliability, portability this system used in other applications like smoke detection.
- It is very useful in-house for detecting LPG gas, which can cause huge loss of property and life.

2. Applications- some of the applications are given below-

- This project is used is used for fire, smoke or gas leakage in any building or industries.
- This system is used as a security system.

It is used in homes hospitals, hotels etc.

III. CONCLUSION

Now a day's security is the importance issue for the world. It is all about fire and gas accident avoider system using GSM The home and industry safety using fire and gas detection using GSM system is used to detect any fire smoke, or gas leakage in any premises building or industry. It is used for detecting any leakage of gas or smoke due to fire or any chemical reaction. It or detected a fire by fire sensor or gas by gas sensor. After detecting the gas or fire that system alerts the consumer about the event with the help of GSM module, which is connected to the ATMEGA8L microcontroller.

Future Prospect- We are living in an automated world or the age of automation. In every field the old manual system is replaced by their automatic counterpart with lesser error probability in use. Keeping the pace with time our project with automatic technology. Our project even includes a circuitry that detects the gas and fire. In our project we only focus on the detection of the gas leakage and fire but our project can be used for different applications.

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