INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

INTRODUCTION

Nowadays, fire accident causes a huge losses in both economically and human life's. Occurrence of natural disasters is unpredictable and needs very high attention. There is no effective precaution measure for an fire accident. So effective postcautions make the fire accident losses to be smaller. This project has been implemented to detect fire accidents in industries, houses etc.

The fire management system includes Flame sensor and temperature sensors to detect any changes in the environment. If any flame is detected the sprinklers will be switched on automatically to sprinkle the water. Emergency alerts are notified to the authorised owners and Fire station to take immediate postcautions.

LITERATURE SURVEY

[1] This system mainly focuses on fire accident detection in Industries and houses and to reduce their severities. Fire accidents in industries which occur due to increase in temperature, decrease in humidity, release of hazardous gas like methane, butane, propane. DHT 11 sensor to detect temperature and humidity. MQ-2 sensor is to detect gas leakage. GSM module is used as a mode of communication for this method. Temperature and humidity is monitored by LCD.

Hardware used

DHT11 sensor, MQ-2 sensor, Arduino Uno R3, GSM Module, LCD.

Software used

Arduino IDE

PROS

The system can perform different parameter measurements for early detection of building fires. It helps in early reaction, saving lives and property. Capable to display the output from each sensor in the monitoring system.

CONS

The project has been limited to a desired area of condition which is estimated by small area coverage.

[2] In this paper gives an overview of exiting fire-detector types which can be comprehended to one hundred percent completion combined with the progress connected with economical, portable, reliable microcontroller dependent programmed open flame alert system as slightly careful almost a little flames happenings in residence as well as professional areas.

HARDWARE USED

Temperature sensor, smoke sensor, GSM, Arduino.

SOFTWARE REQUIRED

GPRS, Arduino IDE.

PROS

The fire alarm system is capable to locate and identified the place that is in fire where by it is monitored using the monitoring system. Capable to display the output from each sensor in the monitoring system.

CONS

Detects the fire from one location at a time, if there is fire in other location, the system will not be able to detect, prevention of smoke is not contained in the project.

[3] This system measures and records the parameters like temperature, humidity, and gas levels using appropriate sensors like DHT11 and MQ2 without any human intervention. The data is collected by ARDUINO and displayed on the liquid crystal display continuously. The communication between Arduino and PC is done through serial communication using serial communication port of the computer. GSM module for remote monitoring and sensing purpose due to which we can attain maximum automation of system.

PROS

All data can be stored in server and this data can be access by the Application program interface which can display on the monitor and with the help of software the operator can visualize the condition at the time of fire accident.

CONS

No record keeping is being done in the system.

REFERENCES

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