LITERATURE SURVEY

INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

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PAPER 1:

TITLE: Research on Fire Alarm Computer Monitoring System in Fire Engineering

PUBLICATION YEAR: 2021

AUTHOR NAME: Xiyang Feng and Chaofei Wang

DESCRIPTION:

The fire alarm monitoring system of fire protection engineering has formed a complete system, including alarm monitoring,automatic fire control, fire linkage control, and fire data monitoring and analysis modules. This project mainly analyzes the fire alarm computer monitoring system in fire engineering.The measuring devices and single-chip microcomputer in the intelligent fire early warning and monitoring system own many advantages in judging the fire situation. The structural form is a structure that organically combines the main network and the secondary network, so it has strong adaptability and can effectively improve the reliability of the building's fire emergency function. At the same time, the fire alarm computer monitoring system in the fire protection engineering can faithfully reflect the small changes in the monitored environmental objects, and can automatically compensate for the factors that prevent fires in the environment, it also can automatically handle the adverse effects caused by electrical interference. The use of software code programming in the system significantly improves the linkage and repairability of the system regarding fire protection.

PAPER 2:

TITLE:GPS-based fire detection system (Global Positioning System) and SMS Gateway

PUBLICATION YEAR: 2021

AUTHOR NAME:A Aryanti, I Mekongga and R S Dewi

DESCRIPTION:

The benefits of this fire detection system can detect early fire occurrence based on the detection of temperature conditions by accommodating the nature of the fire and able to detect any rise in temperature caused by the existence of the fire.To realize the system, required sensors capable of reading the temperature and smoke. The Arduino Uno microcontroller is the brain control system of the system. At a temperature of> 35 C, the system will activate the DHT 11 and MQ 2 sensors that detect smoke> 50 ppm from fire. The system will activate Buzzer as a warning in the form of the next alarm sound Global Positioning System (GPS) will provide information in the form of coordinates of the location of the point of fire through GSM SIM900 Module Short Message Service (SMS) to the user. The results obtained mq2 = 128 ppm and temperature value = 38 ° C and GPS data with latitude of -3.04798388 and a longitude of 104.78263092. From the data it is seen that the mq2 value reaches> 50ppm and the temperature value reaches> 35 ° C, and the detector outputs buzzer sound and warning notification of coordinate point in the form of SMS containing the message "FIRE available" with the coordination of the location of the fire detected by GPS.

PAPER 3:

TITLE: IOT Based Fire Detection System

PUBLICATION YEAR: 2021

AUTHOR NAME: Rashmi Vinod Patil1, Sayali Fakira Jadhav, Kaveri Sitaram Kapse, Prof. M. B. Thombare, Prof. S. A. Talekar

DESCRIPTION:

The major amount of fire starts due to the electric short circuit. It leads to damage to property and also loss of life. To avoid that or to minimize the damage caused by fire outbreaks due to electric short circuits an IoT technology is used to control

such a kind of risk. Traditional fire detection systems are not that effective and quick to alert the owner about fire, in case no one is present at the location. To overcome this problem in this paper,the design and development of an IoT based Fire Detection System is presented. A system that combines qualities for fire,temperature and smoke detection, sending alert Text Message about the fire to the user along with onsite alarm,updating temperature, humidity and smoke on ThingSpeak cloud every 15 seconds, and it also moves manually with the help of Android Application.The Fire Detection System consists of four main parts: Multiple sensors, communication system (Bluetooth, GSM, NodeMCU), motion planning (Manual patrolling), and Android application for manual patrolling of the system. This Fire Detection system can be used in college, school, office, and industry for safety purposes.

PAPER 4:

TITLE:GSM based smart fire and high-temperature detection system

PUBLICATION YEAR: 2021

AUTHOR NAME: Ravindra Koggalage, Manjula Welihindaand Hasitha Nuwan

DESCRIPTION:

This research refers to an Arduino and Global System for Mobile (GSM) based system for efficient detection of fire hazards. This purpose is industrial and domestic safety, and the primary concern is to avoid the fire hazards that occur to the employees and the properties inside the buildings. As a solution, a smart fire and high-temperature detection system is designed using GSM technology, smoke/temperature sensors, and Arduino technology. A smoke sensor is used to detect the smoke from the fire and a temperature sensor is used to detect temperature increase inside the building. In the event of a fire, an alert message will be sent to the user via short message service (SMS) via the GSM module. Furthermore, when a fire is detected, a signal will be sent to the main power supply circuit breaker via a microcontroller and then the power supply of the particular building will shut down. Results from the test are documented and discussed in this paper. This system helps users to respond immediately to the situation and so improve their safety by protecting their lives and the properties from a disaster.

PAPER 5:

TITLE:A Smart Fire Detection using IoT Technology with Automatic Water Sprinkler

PUBLICATION YEAR: 2020

AUTHOR NAME: Hamood Alqourabah,Amgad Muneer,Suliman Mohamed Fati

DESCRIPTION:

The signals from the integrated detectors such as heat, smoke, and flame go through the system algorithm to check the fire's potentiality and then broadcast the predicted result to various parties using GSM modem associated with the system. To get real-life data without putting human lives in danger, an IoT technology has been implemented to provide the fire department with the necessary data. Finally, the main feature of the proposed system is to minimize false alarms, which, in turn, makes this system more reliable. The experimental results showed the superiority of our model in terms of affordability, effectiveness, and responsiveness as the system uses the Ubidots platform, which makes the data exchange faster and reliable.To determine which combinations and algorithms of sensors can accurately and quickly detect fire.In this project a system is developed that detects fire and activates the fire alarm, the proposed system evaluates the situation and initiates an automatic water sprinkler where the water unit was designed separately, and the system analyses the collected data using Ubidots Platform which results in a faster response.

PAPER 6:

TITLE: Review of Recent Developments in Fire Detection

PUBLICATION YEAR: 2003

AUTHOR NAME: Zhigang Liu,Andrew Kim.

DESCRIPTION:

The integration of fire detection and alarm systems with other building systems should increase fire safety in the building. The fire detection system will be able to communicate with other building systems, correctly discriminate between fire and non-fire threats, identify the exact location of a

fire in the building and provide continuous estimates on smoke and fire spread in the building. However, the integration technology may also create new risks. Sensor technologies,for example, will need to be robust enough to prevent false alarms, and ensure that vital information such as the location of occupants is not lost due to data overload during a fire. Integrated building systems will need to be designed not only to give fire safety priority over other building activities but also that fire emergencies do not crash the building service system.

PAPER 7:

TITLE: loT based Low-Cost Gas Leakage, Fire, and Temperature Detection System with Call Facilities.

PUBLICATION YEAR: 2020

AUTHOR NAME: Abdullah-Al Nahid

DESCRIPTION:

Nowadays, security has been affected by different types of matters. Gas leakage and fire incidents are considered among them. At present, there are many undesirable accidents from gas leakage and fire incidents. One way to prevent accidents involving gas leakage and fire incident detection is to affix a gas leakage and fire incident detection device at adequate places. Indeed, when the gas leakage or fire incident occurs, then the temperature can be increased naturally.