Introduction:

In the list of most threatening causes that led to global warming are fire hazards. Hazards can be resolved by the adaption of new and growing technologies which also help in better living. Applications in monitoring and control are performed by the wireless multisensory network are characterized by small, low power and cheap devices which are integrated with limited computation, sensing, and remote communication. It impacts enormously on fire emergency. Temperature sensors are installed in fire endangered areas which allow a person to manually provide temperature information on fire extinguishing website email or landline number. The process of accessing information from the website may be time-consuming and it may cause some amount of delay in the response to the fire extinguisher. IOT is a wireless technology. Use of IOT is in combination with fire fighting for hazard source monitoring, fire fighting rescue, fire early warning, preventing and early disposal. It is effectively used for the enhancement of fire brigade fire fighting and emergency rescue capabilities.

Survey 1

Name of the paper:International Research Journal of Modernization in Engineering Technology and Science.

Published year:2022

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Topic:IOT BASED INDUSTRIAL MONITORING SYSTEM

Method:

The Industrial Monitoring System project is built on the Internet of Things (IoT).
Arduino is used to control various sensors (using smoke and temperature sensors) providing complete control over the industry. The Internet of Things (IoT) is used in this project to deliver data to the user. The Internet of Things (IoT) is a network of 'things' that allows physical items to communicate data by using sensors, electronics, software, and networking. These systems are self-contained and do not need to interact with humans . The system feeds signals from several sensors, such as the smoke, temperature, and humidity sensors, to the Arduino Mega microcontroller. The data is subsequently sent to the IoT module via the microcontroller (ESP8266). The ESP8266 is a chip that allows microcontrollers to connect to a Wi-Fi network, establish TCP/IP connections, and deliver data. In case a smoke and temperature rise or fall been detect place, the smoke sensor and the temperature sensor would detect the presence of smoke and temperature changes and send the information to the Arduino. the information then is

transmitted through ESP8266 to the Blynk app. Blynk app is a free app on the play store where you can connect your IoT module to your phone screen, and helps you control the project and its activities virtually. The IoT module, four LEDs, one fan, and an LCD are all connected to the microcontroller. LEDs represent different pieces of machinery that can be as a symbol. The temperature and humidity values are also displayed on the Blynk app, thanks to Arduino and the internet. At the same time, informative messages would be displayed on the LCD for manual control. The Wi-Fi module must be linked to a Wi-Fi zone as a pre-requisite for this project. This project can as well be implemented using the GSM module instead of the IoT module. Instead of the Blynk app, you can also create your app through MIT app inventor as well.

Disadvantages:

In some industrial plants,there are some areas which are to be monitored time to time.Sometimes the conditions may become critical which may lead to loss of property and also human loss.

Limitations:

Everything emits some low level radiation likewise in industries more infrared radiation is emitted.

Methods to overcome Limitations:

PIR sensor is used in thermal sensing and motion detection.

Survey 2

Name of the paper:International Journal of Engineering Research & Technology (IJERT)

Published year:2016

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Topic:IOT BASED INDUSTRIAL MONITORING SYSTEM

Method:

The proposed system is placed in an industry where the hazardous gases have to be monitored. The individual sensors are placed to read the range of gaseous concentration in ppm.Each sensor is sensitive to its own specific gas. These sensor values are read by the microcontroller, and then it is programmed to monitor the range of all gases. When the concentration of any gas exceeds its limit then the alarm is put on, simultaneously the concentration of all gases are displayed in the LCD display. This display gives a notification to workers working in the plant premises. A Local Area Network (LAN) port is also available in the Ethernet module which is connected to the

controller so that the concentration of all gases are uploaded to a website constantly.There are two important areas in industries they are Plant premises, Office premises. In plant premises the sensors are placed where the toxic gases are expected to evolve, in the occurrences of the gases their concentration is calculated in the form of voltages. The sensor converts the physical quantity into the voltages, when concentration increases the input voltage to microcontroller through sensor is also simultaneously increases. In office premises, the concentration of each gases are monitored in the website. The government sectors and health organizations having authority of analyzing the industrial status can also have a note on the website information.

Disadvantages:

As techology continues to advance and more of the world, including manufacturing plants and industries still themeselves becomes connected,understanding the associated with internet of things(IoT) deployments is increasingly important.

Limitations:

In industries it is necessary to detect temperature of the surrounding environment.

Methods to overcome Limitations:

Temperture sensors can be used.

Survey 3

Name of the paper : Eurasian Journal of Engineering and Technology.

Published year: May 2022

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Topic: IOT BASED INDUSTRIAL PARAMETERS MONITORING AND CONTROLLING SYSTEMS.

Method:

To aid problems in industries, monitoring and controlling system has been developed by inclusion of IoT. In this Arduino UNO ATmega 328 is used. This system also includes gas sensors, flame sensors as well as radiation sensors for detection.The system works in 4 phases ofoperation. The

1st phase is data acquisition. Gas sensors, flame sensors as well as radiation sensors are used to collect real time data. The 2nd phase is data processing. The data acquired by the sensors are compared to the set safety limits by the users .The 3rd phase is data logging. The data collected in real time is then sent to the user via email. The 4th phase is safety alert. In this phase the user or the individuals working in the area of deployment is made aware of the crisis via different arrangements and basic preventive measures are triggered as well. The real time monitoring can be also done via LabVIEW.

Limitations:

Safety alert which is done using buzzer will be heard only to a small range and it is limited.

Methods to overcome Limitations:

Gprs modem - sim 8001 can be used to alert the user through sms.

Survey 4

Name of the paper : International Reaserch Journal of Engineering and Technology.

Published year: August 2021

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Topic: IOT BASED INDUSTRIAL MONITORING SYSTEMS USING ARDUINO.

Method: Objectives of this project is to make a unique device for safely detecting the malfunction.It has several sorts of sensors like PIR sensors, flame sensors, gas sensors, and temperature and humidity sensors. These sensors are installed in the required locations. The temperature and humidity sensors are used to display the readings.The flame sensor is used to detect fire.The PIR sensor is used to notify unauthorized entry. These sensors gather data and transmit it to the microcontroller (Arduino UNO).Arduino UNO is programmed with a specific threshold value. If the value is less than the threshold, the situation is normal. If it exceeds the threshold value, the Arduino UNO sends a signal to the corresponding output. If the gas is leaking, a buzzer sound is produced. If fire is detected by the flame sensor, the Arduino UNO is triggered, and the water sprayer is used.All these data is sent and shared utilizing a Wi-Fi module. Websites are used to provide graphical representations of data from sensors.

Limitations:

Buzzer sound will be limited to a short range.

Ways to overcome Limitations:

Apart from buzzer sound GSM module can be used to send alert notifications through SMS.

Survey 5

Name of the paper : International Journal of Safety and Security Engineering

Published year: August 2021

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Topic: An Integrated System for Smart Industrial Monitoring System in the Context of Hazards Based on the Internet of Things.

Method:

All of these sensors pick up the values (gases in ppm, the temperature in Celsius, humidity in percentage and transfers them to the microcontroller. This work uses GSM technology in order to send an SMS to the industry official in case any of the sensor values exceed the minimum threshold value which signifies the ideal conditions in the industry. SIM900 GSM Modem is used for this purpose. A SIM (Subscriber Identity Module) card is placed in its slot and then the GSM module is activated. Thus, when the sensor values go beyond the pre-set ideal values, then the GSM modem will send a message to alert the industry authority who can immediately take the necessary actions to avoid any mishap.The project uses Arduino Mega 2560 as the microcontroller which is interfaced with a variety of sensors like MQ2 Flammable Gas Sensor and Carbon monoxide Sensor termed as MQ7another one MQ135 for measuring the Air Quality of industry, and a DHT11 is used for measuring the variation of Temperature and Humidity.This project uses GSM technology in order to send an SMS to the industry official in case any of the sensor values exceed the minimum threshold value which signifies the ideal conditions in the industry. In the event that anyone of the sensors experiences a condition that surpasses this threshold, the GSM module will immediately notify the concerned official of the problem.

Disadvantages:

Industries considering launching a manufacturing or industrial IoT initiative or connecting existing technology for automated and remote monitoring or access will need to consider all of the potential risks and attack vectors associated with those decisions.

Limitations:

Message is not enough to alert the all the people who are present inside an industry.

Ways to overcome Limitations:

An alarm can be set to alert the people in inside an industry.