**HAZARDOUS AREA MONITORING FOR INDUSTRIAL PLANT**

**POWERED BY IOT**

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**INTRODUCTION:**

The Internet of Things (IoT) is pervasive across many industries and has an impact on both business operations and everyday lives. IoT stands for the change from computer networks to an object network where each component of daily social and professional life.

Due to accidents, inadequacies, or plain negligence on the part of industry authorities, there have been countless fatalities, severe injuries, and catastrophic damages that have disrupted people's lives suffering' and future generations. To avoid any future catastrophe like this project suggests a cutting-edge checking methodology reliant on the Internet of Things (IoT).

This construction project creates a mechanical observation framework that recognises anomalous concentrations of gases including carbon monoxide, LPG, butane, and hydrogen that could set off an explosion. Additionally, it displays air volume. Along with monitoring the temperature and cleaning up any pollution the company may have humidity levels.

Integration of data from multiple sensors ensures the industry's safety. The system operates reliably and steadily. It is the best and most responsible way to monitor hardware security.

**OBJECTIVE:**

* Monitoring temperature fluctuations is particularly important since different industrial equipment's operations are impacted by temperature variations, which are a physical component of the environment.
* The computer has a microcontroller chip incorporated for managing various settings, and a system keeps track of the real-time data collection. On LCD, values from various parameters are compiled and shown.
* A collection of all the code is burned into the Arduino.
* Each code stands for a certain parameter, such as air, temperature, pressure, or humidity. The systems platform can be used to implement the intelligent industrial remote monitoring of the power system, intelligent furniture monitoring, intelligent warehouse monitoring, etc. This assures the user of the stability and dependability of the system.
* It has good social aspects and is most effective and most economical means of equipment safety monitor.
* It senses changes in temperature, senses smoke, flame etc and sends it to control station by android app.
* In the prototype, installations of sensors in three distinct locations to identify the exact location of fire hazards that have taken place.

**LITERATURE SURVEY:**

The employment of wireless technology is improving people's safety and pleasure in the modern world. IOT, AR, AI, and other wireless technologies are in high demand for adapting to changing lifestyles. Using the same wireless sensors from earlier inventions, we wanted to build a sensor network for the detection and prevention of risks, followed by the eradication of the source that caused the hazard in the first place. The prototype contains sensors for temperature, humidity, fire, and gas.

The variables that can be monitored in advance to stop the occurrence of a major fire include temperature, gas, and humidity. Fire might be avoided if certain parameters are kept under control, and vice versa. We have employed water as an extinguishing agent to put out and put out the fire. A voice module is also included in the prototype. This gadget records audio notes and plays them back to provide an audible alarm of the parameter it has identified. For instance, if a sensor detects a dangerous gas, such as carbon monoxide, in the environment, the speech module will play the audio output "gas detected." As a result, this prototype can be highly helpful for workers in factories, power plants, etc.

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