

# **LITERATURE SURVEY**

## **Hazardous Area Monitoring for Industrial Plant powered by IoT**

### **1. Design of IoT Based Multiple Hazards Detection and Alarming System**

Md.Tarikul Islam Juel ,Md. Sajid Ahmed, Conference: 2019 4th International Conference

This paper proposes a study with a prototype that can detect most of the combustible gas and LPG gas leakage with the help of MQ2 smoke sensor. Also, this project includes a temperature and humidity detecting sensor name DHT11 which is used to observe the unusual change in the level of temperature and humidity. Besides, there is also a barometric pressure sensor to detect the atmospheric pressure of the warehouses. When any fire or hazard occurs, the pressure of this enclosed area will be changed significantly that can be detected by barometric pressure sensor. All those sensors data are sent to the Adafruit IoT platform website dashboard monitored by the respective authority with the help of NodeMCU, WIFI development board. The whole system is run by rechargeable battery. Thus, the project goal is achieved.

### **2. Smart Helmet for Coal Mines Safety Monitoring and Alerting**

S. R. Deokar , V. M. Kulkarni , J. S. Wakode, IJARCCCE, Vol. 6, Issue 7, July 2017

Industrial safety is one of the main aspects of industry specially coal mine industry. Underground mining hazards include suffocation, gas poisoning, object fall, roof collapse and gas explosion. So air quality and hazardous event detection is very important factor in mining industry. This system provides a wireless sensor network for monitoring real time situation of underground mines from base station. It provides real time monitoring of harmful gases like CO, CH<sub>4</sub> and LPG and also temperature. The main reason for death of miners is that, due to any reason miners falls down and loses consciousness also proper treatment is not provided them at that time. To overcome this problem the system provide emergency alert to the supervisor if person fall down by any reason. Some workers are not aware for safety and they are not wear helmet. A Limit switch was then used to successfully determine whether a miner has removed his helmet or not. The system uses Zigbee technology for transmission of data from underground mine to base station. There is alert switch at mines and base station for emergency purpose.

### **3. IoT based Smart Helmet for Ensuring Safety in Industries**

Mangala Nandhini. V , Padma Priya G.V , Nandhini. S, Mr. K.Dinesh

International Journal of Engineering Research & Technology (IJERT), Special Issue - 2018

Industrial safety is one of the main aspects of industry . Working environment hazards include suffocation, gas poisoning and gas explosion. Hence air quality and hazardous event detection is very important factor in industry. In order to achieve those safety measures, the proposed system provides a wireless sensor network for monitoring real time situation of working environment from monitoring station. It provides real time monitoring of harmful gases like CO, CH<sub>4</sub> and LPG and also temperature and humidity. To overcome those hazardous situation, this system provides emergency alert to the monitoring station . Some workers are not aware of safety and they did not wear helmet properly. For this purpose, a limit switch was used to successfully determine whether the workers had worn their helmet properly or not. The system uses Wi-Fi technology for transmission of data from working environment to the monitoring station. There is an alert switch at working environment for emergency purpose.

### **4. IoT Based Industrial Pollution Monitoring System**

Doma Harsha Vardhan Reddy , Arun Gowda K , V Kalyan Kumar , Dr Jeevan K M

Journal of Xi'an University of Architecture & Technology , Volume XII, Issue V, 2020

In this project an IoT based system to screen pollution levels in mechanical condition or explicit region of interest, remote embedded enrolling structure is proposed. The system is using Arduino Uno with blynk server as an interface among transmitter and recipient.

### **5. IoT- Based Air Pollution Monitoring and Forecasting System**

Chen Xiaojun published a paper “IoT- Based Air Pollution Monitoring and Forecasting System” in the year 2015

An IoT based system for air pollution monitoring and forecasting. A low cost air pollution monitoring system was proposed by Khaled Bashir Shaban et, al. in their paper entitled “Urban Air Pollution Monitoring System With Forecasting Models”. The system was capable of receiving, storing and preprocessing the data. It is capable of converting the data into useful information.