

# Hazardous Area Monitoring in Industrial Plants

## Powered by IOT

### LITERATURE SURVEY

S.NO	TITLE	AUTHOR(s)	OBJECTIVE	LIMITATIONS/REMARKS
1.	A Hazardous Area Personal Monitoring System for Operators in Gas Depots and Storage Tanks (2022)	Elia Landi, Lorenzo Parri, Ada Fort, Marco Mugnaini, Valerio Vignoli, Dinesh Tamang, Marco Tani	This work describes a smart monitoring system for the detection of flammable gas residues, toxic gases, and reduced oxygen concentrations. The proposed system aims at reducing the risk of fires and explosions, thus increasing the safety of workers engaged in maintenance or inspection of gas storages.	The system proposed in this paper is compact and battery-powered. It contains sensors for monitoring LPG flammable compounds, toxic gases, and oxygen. The sensor nodes transmit data through a LoRa low power radio channel to a remote server. This system can be used as a model for our project with an additional Temperature sensor for monitoring the Temperature.
2.	IOT based Industrial Monitoring System	Hemlata Yadav, Naomi Oyiza, Sarfaraz Hassan, Dr. Suman Lata, K. Jaya Chitra	The goal of this study is to create an IoT-based industrial monitoring system with intelligent sensors. Because of the integration of big data, the Blynk app can be used to monitor status from anywhere on the planet.	This paper gives an overview of the available technologies for Industrial monitoring. It describes the use of Blynk app for data interface with user.
3.	Monitoring of Hazardous Gases in Process Industries Through Internet (2016)	Dr. K. R. Valluvan, P. Ragavi.	The existing detection systems are available to sense only a particular gas and they use GSM technology to indicate the critical situations. The drawback is that the detection system can send a message to only one person. The proposed system is made up of monitoring and alerting system through Internet of Things (IoTs). In this the dangerous, toxic and flammable gases are sensed using individual gas sensors and an Arduino UNO controller. The concentration of all gases values are displayed in ppm using a LCF; when the value exceeds the limited range then an alarm is put on.	This paper proposes a parallel sensor interface with an arduino UNO board and simple display using LCDs. The paper introduces the various available Gas sensors that can be used for monitoring the presence of different gases in the surrounding Environment. The individual gas has its own range of risk, they are identified using advanced sensors. This system gives an instantaneous alarm during the excessive emission of hazardous gases.

4.	IOT based Interactive Industrial Energy Management System and Emergency Alert Using SMS & E-Mail	G. Rama Krishnaprabu, G. Ramkumar, M. Jagadeesh, E. Senthilkumar, P. Ashok Kumar	The entire monitoring and control progress of the industrial utilities is an appropriate improvement in the industrial growth system. Here, the various industrial parameters are taken up for control such as gas, fire, machine, motor, in embedded based control module. In this module, the fire and gas sensor will analyze its set range variation by the controller. If it exceeds its pre-defined values set in the controller the immediate indication and alert is arrived for to take necessary safety precaution and control in real time application	This paper utilizes a PIC Microcontroller for interfacing a large number of sensors for monitoring the systems used in Industry. It iterates the need for control and monitoring mechanism and improves these measures by using SMS and E-Mail based alerts.
5.	Android Based Real-Time Industrial Emission Monitoring System Using IoT Technology (2017)	Dennis A. Martillano, Joshua Miguel R. Dita, Christian G. Cruz, and Kunal S. Sadhra	This study aimed to create a system that will allow Industrial plants and factories to monitor the emission of the smoke stacks held in a manufacturing company anytime, anywhere using IoT or Internet of Things Technology.	This paper uses simple sensors to collect data and process the data using complex algorithms to enable self-calibration of the sensors. Configured XBEE modules that utilize IEEE 802.15.4 standard were set-up to commence communication in a point to point wireless network among the entities in the system