

LITERATURE SURVEY

DATE:	22 september 2022
TEAM ID:	TNT2022TMID39426
PROJECT NAME:	Hazardous Area Monitoring for Industrial Plant powered by IoT
MARKS:	4 marks

PROJECT 1:

Title: A Smart Fire Detection System using IOT Technology With Automatic Water Sprinkler.

Author: Hamood Alqourabah, Amgad Muneer, Suliman Mohammed Fati et al

Year: 2020

Description:

Hamood Alqourabah, Amgad Muneer, Suliman Mohammed Fati et al.(2020) proposed a “A Smart Fire Detection System using IOT Technology With Automatic Water Sprinkler”. This paper has been developed to solve the slow response issue of fire accidents. Temperature, gas, and flame sensors are inputs. Output like LED and Buzzer indicate a fire. Water system launched with 12V water pump powered by Arduino and control by a 5v relay. The sprinkler head is the outer of the water output. An ultrasonic sensor is used to measure the tank level and inform the need for refilling. By analyzing the result, we can easily identify the sense of fire accident.

Advantages and Disadvantages:

Advantages	Disadvantages
<ul style="list-style-type: none"> • Immediate response of fire accident. 	<ul style="list-style-type: none"> • Implementation complexity.
<ul style="list-style-type: none"> • Prevention before it is too late. 	<ul style="list-style-type: none"> • High maintenance service.
<ul style="list-style-type: none"> • It reduces the demand of security. 	<ul style="list-style-type: none"> • Periodic adjustment.

PROJECT 2:

Title: "Gas monitoring and power cut-off system for underground mines"

Author: A. Kumar, H. Kumar, V. N. Pandey, D. K. P. Singh and S. K. Chaulya et al

Year: 2012

Description:

A. Kumar, H. Kumar, V. N. Pandey, D. K. P. Singh and S. K. Chaulya et al. (2012) proposed a "Gas monitoring and power cut-off system for underground mines". This mechanism detects several hazardous gases from burning smoke, fumes (soldering) in the field of mining domain. This work includes designing and implementation of a system that continuously monitors the concentration of methane (CH₄) and carbon-monoxide (CO) gas in the underground mines, which automatically cuts off the power supply of the particular zone in an underground mine, when the concentration of CH₄ exceeds more than the permissible limit decided by the user. By analyzing this paper, the proposed gas monitoring system plays a vital role in detecting the gases in mines.

Advantages and Disadvantages :

Advantages	Disadvantages
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<ul style="list-style-type: none"> • Electronic sensors have got enormous contribution towards the research in the field of mining domain. 	<ul style="list-style-type: none"> • Design process complex.
<ul style="list-style-type: none"> • Wide range of fault gases highest accuracy and repeatability. 	<ul style="list-style-type: none"> • Long time required to complete a test .
<ul style="list-style-type: none"> • Prevent the workers from risk. 	<ul style="list-style-type: none"> • Frequent calibrations needed.

PROJECT 3:

Title : “MONITORING TEMPERATURE, HUMIDITY AND CONTROLLING SYSTEM IN INDUSTRIAL FIXED ROOM STORAGE BASED ON IOT”.

Author : M.T.A.Seman,M.N.Abdulllah,M.K.Ishak et al .

Year:2020

Description:

M.T.A.Seman, M.N.Abdulllah, M.K.Ishak et al.(2020) proposed a “MONITORING TEMPERATURE, HUMIDITY AND CONTROLLING SYSTEM IN INDUSTRIAL FIXED ROOM STORAGE BASED ON IOT”. this paper was proposed new features that can detect, notify, record and control the humidity and temperature instantaneously in order to have stable, controllable atmospheric conditions. The temperature and humidity sensor is the input used to get the surrounding temperature and humidity inside the room. The NodeMCU works as the brain of the system that receives data from DHT- 11 sensor and upload them to the database. The data and information from DHT-11 sensor will be analysed graphically on Blynk platform using NodeMCU. Humidifier triggered when the reading of temperature and humidity is less than 20% and more than 80%. The system is capable of obtaining the temperature and humidity of a space, thus providing a real time temperature and humidity monitoring either using an application in a smartphone via WIFI over IoT, a LCD display embedded in the system or a computer interface.

Advantages and Disadvantages :

Advantages	Disadvantages
<ul style="list-style-type: none">• Implementation is simpler .	<ul style="list-style-type: none">• Time consuming process.
<ul style="list-style-type: none">• Maintain the controllable atmospheric condition .	<ul style="list-style-type: none">• Continuous monitoring is required .

PROJECT 4:

Title : “Toxic gas detection and monitoring utilizing internet of things”.

Author: Dr. Chalasani Srinivas, Mohan Kumar.Ch et al.

Year: 2017

Description:

Dr. Chalasani Srinivas, Mohan Kumar.Ch et al. (2017) proposed a “Toxic gas detection and monitoring utilizing internet of things”. This project intended to avoid industrial accidents and to monitor harmful gases and to intimate alert message to safety control board of industry using ArduinoUno R3 and internet of things. Arduinio Uno R3 board is used as central microcontroller which is connected with sensor which can continuously monitor respective environment parameters. An alarm is produced instantly if the level of the gases goes above the normal level means indication through the internet specific receiver section. Data received by sensor is stored in internet which can be used for further processing and it can be analyzed for improving safety regulations. This model can be future extended for providing better

living environment for people in and around industries with a pollution controlled environment

Advantages and Disadvantages :

Advantages	disadvantages
<ul style="list-style-type: none">• It utilized just constrained sensor.	<ul style="list-style-type: none">• More calibrations needed.
<ul style="list-style-type: none">• It can check the gases and radiation in android portable.	<ul style="list-style-type: none">• Time consuming process to complete a test .

