International Journal of Innovative Research in Science and Engineering
Volume 7, Issue 07, 2021
www.ijirse.com
ISSN: 2454-9665

IOT BASED INDUSTRY FAULT MONITORING SYSTEM

Mr. Arun Kumar Mishra[1], Sudhir[2], Shiva Yadav[3]

[1]Asistant professor of electronics & communication dept,

[23] student, Electronic & communication

BUDDHA INSTITUTE OF TECHNOLOGY, GORAKHPUR

ABSTRACT

Today, smart grid, smart homes, smart water networks, intelligent transportation, industry, are infrastructure systems that connect our word more then we even though possible. The common vision of such system is usually associated with a single concept, the Internet of things(IOT)where through the use of sensors, the entire physical infrastructure is closely coupled with information and communication technologies can use embedded network device for monitoring and managing of sensors, these devices will connect to internet to share difference types of data, we have proposed an Industrys monitoring system using XAMPP serverand sensing devices to check different parameters like production count, illumination intensity power consumption, relative humidity and temperature of industrys

INTRODUCTION

This project can prove to be very effective in the industrial word. Every year husband of laborers dies. Due to not getting the information at the right time. May 2020, there have been 30 industrial accidents, in India, killing at least 75 workers, according to industrial global union of workers; from 2014 to 2017,8004 such incident in Indian workplace killing 6,368 employees. Most such incident took place in Delhi Maharashtra and Rajasthan, the society is growing with various developments, the industrial failed requires more manual power to monitor and control the industrial parameter such as temperature, humidity, gas etc. This is the most upcoming issues in the industrial sector. if the parameters aur not monitored properly, it leads to a harmful situation most of the industries are facing those kinds of situation because of the industries same manual mistakes. the outmoded forms of storing various food product in cold store room fails to satisfy human need through the monitoring temperature and humidity inside cold store room.to overcome manual mistakes we are using industrial monitoring system with internet of things.

International Journal of Innovative Research in Science and Engineering
Volume 7, Issue 07, 2021
www.ijirse.com
ISSN: 2454-9665

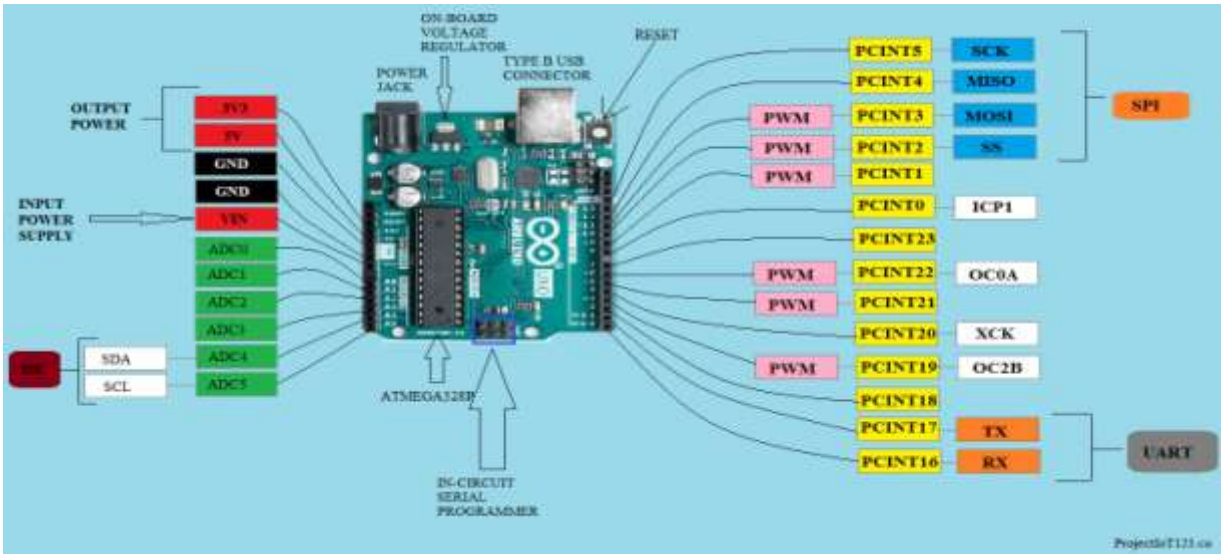
Wireless sensor network has been employed to collect data about physical phenomena in various application such as habitat monitoring

COMPONENT

In this section. The system contains several sensor for measurement of parameter the sensor use in this project is gas sensor, humidity sensor, fire sensor(light dependent resistor)

1. Arduino UNO
2. Wi-fi module (ESP8266)
3. Smoke sensor
4. Temperature sensor
5. IR sensor
6. Fire sensor
7. LPG sensor
8. Buzzer
9. Exhaust fan
10. Battery

ARDUINO UNO



The Arduino is an open-source microcontroller development board on the ATMEGA328P microcontroller IC designed to provide a simple and cheap platform for digital and embedded systems project.

The ATMEGA328P microcontroller IC is the heart of Arduino microcontroller development is the board is designed around the ATMEGA328P microcontroller IC. It has 25 pins

The Arduino uno is a microcontroller looks like on the above image.

Wi-fi module (ESP8266)

The ESP8266 wi-fi module is a self-contained soc with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable or either hosting on application or offloading wife networking from another application processor.

Each ESP8266 module combed pre-programing with a command set meaning.

This module has a power full enough on-board processing and stores capability that allows it to be integrated with sensors and another application

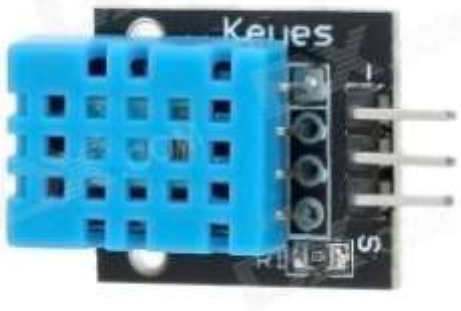
Feature of ESP8226: -

11. Processor L106 32-bit reduced instruction set computer processor core based 0n Tinseling Extensa diamond standard 106 micro running at 80 MHZ
12. 64kb of instruction RAM,64 kb of data RAM
13. External QSPI flash :412 KiB to 4MB
14. WPA/WPA2 authentication, or open networks
15. 16 general purpose input/output pins
16. Serial peripheral interface Bus
17. Inter-integrated circuit
18. Inter-IC sound interface with sharing pin with general purpose input output pins
19. 10 bits Analog to digital converter

International Journal of Innovative Research in Science and Engineering
Volume 7, Issue 07, 2021
www.ijirse.com
ISSN: 2454-9665

Temperature & Humidity sensor (DHT11)

this DHT11 temperature humidity sensor features a temperature &humidity sensor complex with a calibrated signal output. By using the exclusive digital-signal acquisition technique and temperature and humidity sensing technology, it ensures high reliability and excellent long-term stability. This sensor includes a resistive types humidity measurement component, and connects to a high performance 8-bit microcontroller, offering excellent quality, fast respondent-interface ability and cost —effectiveness



IR sensor: -

An infrared sensor is an electronic device, that emits in order to sense some aspects of the surrounding. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measure only infrared radiation, rather than emitting it that is call a passive IR sensor. usually the infrared spectrum, all the object radiate some form thermal radiation.

IR technology is use to in daily life and also in industries for different purposes. For example, TV use an IR sensor to understand the signal which are transmitted from a remote control. The main benefits of IR sensors are low power usage, their simple design their convenient feature.IR signal is not noticeable by the human eye. The wavelengths of these wave range 0.7-1000 micrometer

FIRE SENSOR: -

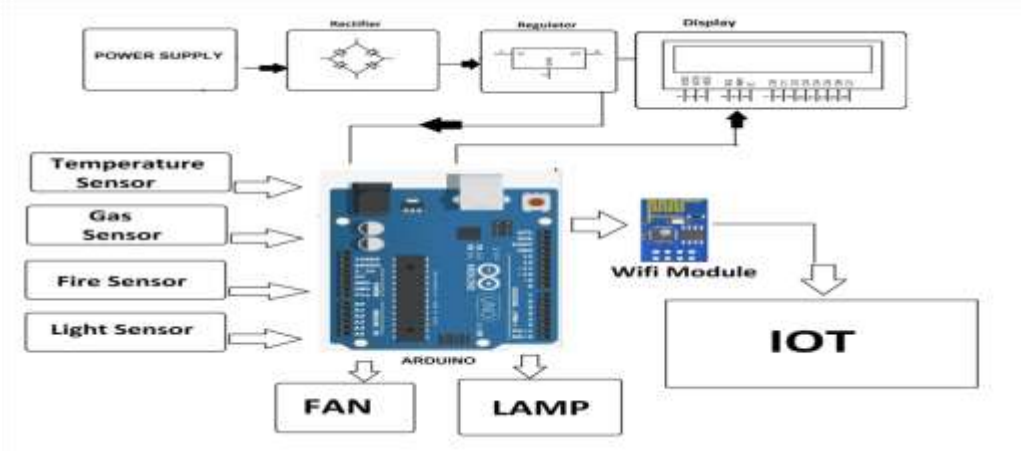
In industries, many types of gas are released, so the fire sensor is very important the fire sensor plays a very important role, fire detectors sense one or more of the products or phenomena resulting from fire, such as smoke, heat, infrared and /or ultraviolet light radiation, or gas

BATTERY

Lithium-ion battery is the most powerful battery. High energy density, loses actual charging capacity over time. The capacity to convert battery into actual power 85-90%, it is more volatile as compared to lithium polymer, heavier and cheaper. Its long-lasting battery.

International Journal of Innovative Research in Science and Engineering
Volume 7, Issue 07, 2021
www.ijirse.com
ISSN: 2454-9665

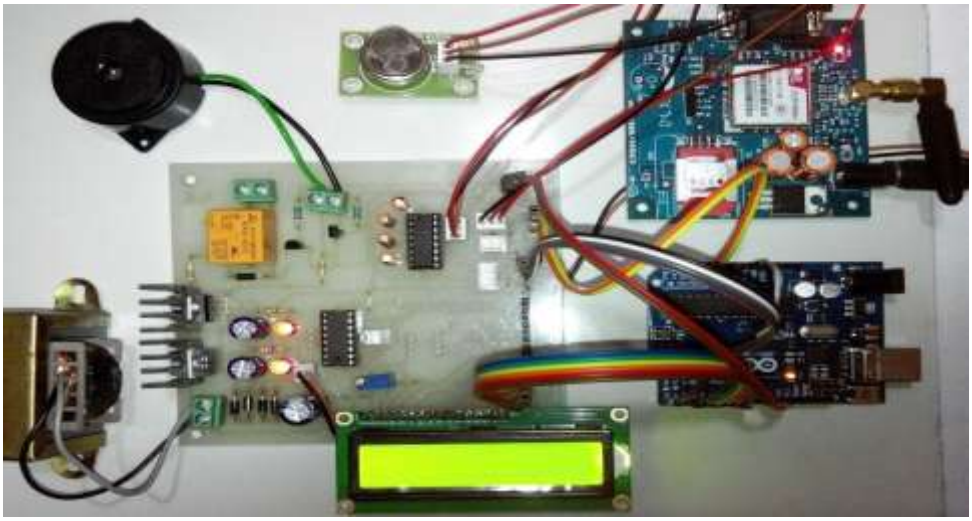
BLOCK DIADRAM



WORKING

this project can prove to be very effective in the industrial word. We will soon see, may 7,2020: At least 12 people died and over 350 were hospitalized after styrene monomer gas leaked from a chemical plant in Visakhapatnam, and may 7&july1,2020: In two boiler explosions least 13 employees were killed and 17 injured in NLC India Ltd.in naively.

Considering all these reasons we have developed this project which is based on IOT and easy to monitoring, we are use a Arduino which is provide command all the given sensors and instruments which are connected to each other, we use ESP8266 module which is connected to server and shear all information on display after sensing harmful gases and critical situation



APPLICATION

This project are use for monitoring machine temperature and humidity leakage gases And monitoring cold stor room temperature and gases levelsAnd use in automotive industries

FUTURE SCOPS

In automotive industries Iot has enabled greater transportation efficiency and management capabilities and is leading us to a future intelligent autonomous area

CONCLUSION

the wireless sensor network is connected with the internet with the help of the IOT gateway and also ensure the monitoring of the product inside cold store rooms. Also, these types of application help in checking the temperature and humidity on a continuous basis and then resulting instruction are sent to the server. Based on which the environment inside the store room can be monitored. this type of system can help in industrial Automation using IoT, with the help of which we can take intelligent decisions.

REFERENCE

20. https://www.google.com/search?q=industrial+monitoring+system+using+iot&source=lnms&tbm=isch&sa=X&ved=2ahUKEwiA1JHR7sXxAhU8gtgFHbenDrcQ_AUoAXoECAIQAw&biw=786&bih=448&dpr=1.25#imgrc=7x5tozS7Alq1X
21. . https://ieeexplore.ieee.org/abstract/document/8728324/references#references
22. https://ieeexplore.ieee.org/document/6851114
23. https://www.elprocus.com/infrared-ir-sensor-circuit-and-working/
24. https://www.hpe.com/in/en/solutions/industrial-internet-of-things.html?jumpid=ps_ksr26zc1qi_aid-520042866&ef_id=EAIaIQobChMIi-q9uu3E8QIVQ62WCh2WFAtSEAAYASAAEgL-B_D_BwE:G:s&s_kwcid=AL!13472!3!497504182203!p!!g!!industrial%20iot%20applications!12302814401!120288919609&gclid=EAIaIQobChMIi-q9uu3E8QIVQ62WCh2WFAtSEAAYASAAEgL-B_D_BwE&gclsrc=aw.ds
25. https://www.securiton.com/en/products/fire-detection.html
26. https://www.elprocus.com/infrared-ir-sensor-circuit-and-working/
27. https://start.paloaltonetworks.com/5-must-haves-iot-security?utm_source=google-search&utm_medium=paid-search&utm_term=iot%20security&utm_campaign=INS-JAPAC-EN-Search-Lead_Gen-AU/IN/SG-Key_Terms&utm_content=487880228057-c&utm_network=&sfdcid=7010g000001dJ6QAAU&_bt=487880228057&_bm=p&_bn=g&gclid=EAIaIQobChMIs5HD5_fF8QIVUg4rCh3lawNjEAAYASAAEgKi5_D_BwE
28. https://nevonprojects.com/iot-industry-protection-system-arduino/#:~:text=The%20IOT%20industry%20protection%20system,furnace%20blasts%20or%20other%20conditions.
29. https://ieeexplore.ieee.org/document/6972663