# INDURTRIAL AUTOMATION USING IOT

*Ms. Snehal W. Gakhre Electronic & Telecommunication, PJLCE, Nagpur*

*Ms. Sonal P. Raut Electronic & Telecommunication,PJLCE,Nagpur*

*Ms. Payal D. Devikar Electronic & Telecommunication,PJLCE, Nagpur*

*Ms. Megha M. Kamale Electronic & Telecommunication,PJLCE, Nagpur*

## Abstract

Monitoring in Industries is done by sensor with most accuracy and reliability. Internet of things (IOT) is rapidly increasing technology. IOT is the network of physical objects or things embedded with electronic software, sensors, and network connectivity which enables these objects to collect and exchange data. It uses a technology that makes use of control system such as computer to control the physical device over the internet. Here we propose efficient industry automation system that allows user to efficiently control industry appliances/machines over the internet. We use 4 loads as industrial appliances or machines and a motor to demonstrate as an industrial motor. We are developing a system which will automatically monitor the industrial applications and generate Alerts/Alarm or take intelligent decisions using concept of IOT. Safety from leaking of raw gas and fire are the most important requirements of home and industries security system for people.

Automatiogrowing n is the current need of industries. There are number of technologies that are to achieve the good automation in the plant. Industries have been automated with machines that allow for fully automated tasks without or little manual intervention. Well here we propose an internet based industry automation system that allows a single industry operator to control industry appliances with ease using ATmega16 processor and IOT. Our proposed system allows for automation of industrial loads to achieve automation over internet. We use IOT for the web serve interface and ATmega16 processor to process and run circuit loads. User is allowed to send commands for machines/ load switching over internet using IOT from anywhere in the world over internet. The ATmega16 processor captures these commands by internet over wifi connector. Now the ATmega16 processes received data to extract user commands. After getting commands it displays it on LCD display.

**Keywords:** *IOT, ATmega16, wi_fi module*.

## 1.1-Introduction

In recent years a wide range of industrial IoT applications have been developed and deployed. Evolution of this starts from RFID technology, which allows microchips to transmit the identification information to a reader through wireless communication. By using RFID readers, people can identify, track, and monitor any objects attached with RFID tags automatically. Another technology is the wireless sensor networks (WSNs), which mainly use interconnected intelligent sensors to sense and monitoring. Its applications include environmental monitoring, industrial monitoring, traffic monitoring. Both RFID and WSN are used Our project automation of industries using ARM7 processor is based on IOT. IOT can be described asconnecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the internet where the devices are intelligently linked together enabling new forms of communication between things and people and between things themselves. IOT can be realized in three Internet oriente, things oriented The

world around us is getting automated. Automated systems are favored over manual systems, as they are energy efficient and minimize the need for tedious manual labour and make tasks easier and faster, leading to more industrial output. Here we propose an internet based industry automation system that allows a single industry operator to control industry appliances with ease using ARM7 processor and IOT. Our proposed system allows for automation of industrial loads to achieve automation over internet. We use IOT for the web serve interface and ARM7 processor to process and run circuit loads. User is allowed to send commands for machines/ load switching over internet using IOT from anywhere in the world over internet. In previous year, Industry was monitored manually, but this paper introduces Artificial Intelligent to monitor as well as control the Industry autonomously without human intervention. In order to understand the development of IOT in industries, this paper reviews the current research oF IOT, key enabling technologies, major IOT applications in industries, and identifies research trends and challenges Sensors (Temperature sensor, Pressure sensor, Humidity sensor, Vibration sensor, Intrusion sensor) are used to percept the environment and object conditions. Analog signal are provided to android device produced by sensors. Admin set threshold to every sensors placed in Industrythe development of IOT in industries, this paper reviews the current research of IOT, key enabling technologies, major IOT applications in industries, and identifies research trends and challenge a system which will automatically monitor the industrial applications and generate Alerts/Alarms or take intelligent decisions using concept of IOT.various sensors to control the industrial devices using Bluetooth. which alerts the admin about uneven conditions using Bluetooth.

## 1.2-BLOCK DIGRAM:
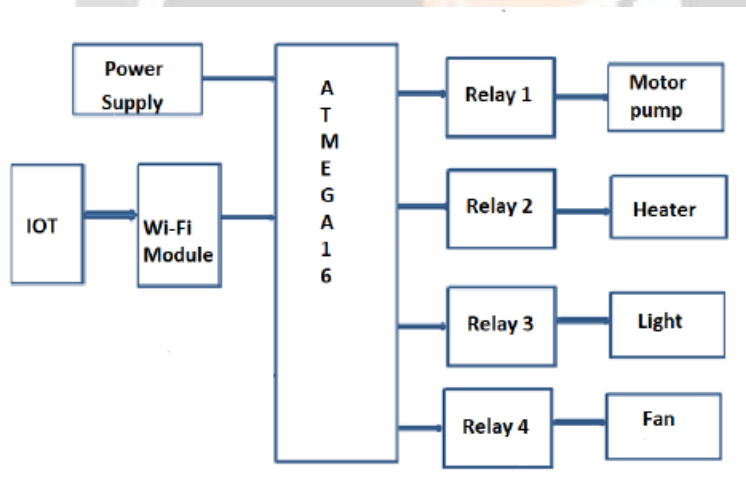


## 1.3-Literature Survey

applications and generate Alerts/Alarms or take intelligent decisions using concept of IOT. In this paper, they are developing a system which will automatically monitor the industrial RASPBERRY PI AND IOT BASED INDUSTRIAL AUTOMATION IOT is achieved by using local networking standards and remotely controlling and monitoring industrial device parameters by using Raspberry Pi and Embedded web server Technology Using embedded web server along with raspberry pi it is possible to monitor and control industrial devices remotely by using local internet browser.

A REVIEW ON INDUSTRIAL AUTOMATION USING IOT They have developed new technologies that have allowed us to move from the First generation of the Internet into the current transition into the Fourth generation. This generation has been propelled by the concept of the Internet of Things (IOT). IOT BASED AUTOMATED TEMPERATURE AND HUMIDITY MONITORING AND CONTROL In this paper, a raspberry pi running with Linux OS coded with C++ program that retrieves the temperature as well as humidity readings and these values are sensed and sent to the internet.

Temperature sensor measures the temperature and produce corresponding analog signal which is further processed by the microcontroller. The simulator acquires data from the microcontroller through Ethernet port. The data will be displayed on the LCD in microcontroller and PC monitor. Automation and control can be done with the help of control circuitry.

The literature related to the research topic has been reviewed for last twenty years in order to find out work carried out by various researchers. There are many systems for remote monitoring and control designed as commercial products or experimental research platforms. It is noticed that most of the research carried out belongs to the following categories: Internet based Monitoring using Servers, GPRS modems, etc. with different approaches. GSM -SMS protocols using GSM module individually or in combination with Internet technologies Monitoring using Wireless Sensor Network .Wireless Monitoring using Bluetooth, Wi -Fi, and RF (radio frequency). Applications have varied widely like Home Automation, Security Systems, Bio-medical applications, Agriculture, Environment, Reservoir, Bridge health monitoring, etc.

The ARM7 processor now captures these commands by internet over wifi connector. Now the ARM7 processes received data to extract user commands. After getting commands it displays them on LCD display. Also, it switches the load on/off based on received commands to achieve user desired output [194-195]. The relay driver is used to drive the relay circuits which switches the different appliances connected to the interface [386-387]. The input from the user is feed to ARM7 and processed to operate respective task semi autonomously and autonomously.

## REFERENCES:

[1] Li Da Zu" Internet of Things in Industries: A Survey" IEEE Transactions on Industrial Informatics, vol. 10, no. 4, November 2017

[2] Sadeque Reza Khan Professor Dr. M. S. Bhat "GUI Based Industrial Monitoring and Control System ``IEEE paper, 2017

[3] Ayman Sleman and Reinhard Moeller ``Integration of Wireless Sensor Network Services into other Home and Industrial networks "IEEE paper

[4] Mr. Prof J Nagaraju, et-al "Fabrication of Solar powered Grass Cutting Machine", International Journal & Magazine of Engineering, Technology, Management and Research, 2017.

[5] Ashwini Deshpande,et-al Prajakta Pitale, Sangita Sanap", "Industrial Automation using Internet of Things(IOT)", IJARCET, Volume 5, Issue 2, February 2016.

[5] Dr.V.Ramya, G.Thirumalai Rajan, "Raspberry Pi Based Energy Efficient Industrial Automation System", IJIRCSE, Volume 2, Issue 1, January 2016.

[6] Prof.R.S.Suryanashi, Kunal Khivensra, Gulam Hussain, Nitish Bansal, "Home Automation System using Android and WiFi",IJECS, Voulme 3, Issue 10, October 2016.

[7] Deepali Javale, Mohd. Mohsin, Shreerang Nandanwar, "Home Automation and Security system using Android",IJECCT, Volume 3, Issue 2, March 2016

[8] Cheahwai Zhao, Son Chee Loon, "Exploring IOT applications using Raspberry Pi", International Journal of Computer Networks and Applications", Volume 2, Issue 1, February 2017.

[9] R.A.Ramlee, M.A.Othman, M.H.Leong, M.M.Ismail, "Smart Home System Using Android Application, ICoICT, (IEEE), March 2015.