Abstract:

The cost of maintenance is a significant component of the total operating cost of all industrial plant and especially those located in far off or hazardous areas where it is not possible to deploy an operator for monitoring the plant. This project presents an IoT based smart system to control and monitor the industrial plant remotely. The system collects the electrical parameters values such as current, voltage, speed, and temperature using appropriate sensors and transmits this data over internet using Wi-Fi to Cloud for further analysis. The system detects fault by analyzing anomaly in the operating parameter and isolates the fault by sending control command if needed. Any accompanying smartphone application serves as a graphical user interface for viewing the status of the plant and the reports. It provides a real-time feedback mechanism alerting the users to take preventive measures if there is any fault. Finally, we conducted experiments to evaluate the effectiveness and accuracy of the system developed and found it working to satisfaction.Since the machines in a hazardous area. So, it will be hard for the employee to control and monitor the status of the machine there. It’s not possible to employ people there because they will be risking their lives and put it in a huge endanger. Also, it will require a lot of time and cost. The system will be allowing us to be updated on the plant’s status and have all the information for the workers without the need of them to physically be there. They will be able to access all the pieces of information at any time through the app. Our system here will have multiple sensors installed to record all the available operating parameters. The data acquisition module contains Arduino and records all the data through it of the machine after that it will be sent over WIFI to database hosted on any cloud. The recorded data will be analyzed and checked for any fault detection and an alert will be sent if something not normal is detected. The status of all machines can be checked through the mobile app. The system here can control and measuring the operating parameters of the plant in the industrial area and communicates with the central database. The collected data will be analyzed for any error and we will isolate the error by sending a control signal to turn off the machine.

# Keywords:

Internet of Things, Remote Monitoring, Remote Controlling, Arduino, Cloud, WIFI.