**Cloud based WSN for Industrial Parameter monitoring, fault detection and alerting system.**

**ABSTRACT**

A remote monitoring, control and intelligent are one of the most important criteria for maximizing process industrial plant availability production. With the development of modern industry the requirement for industrial monitoring system is getting higher. A system is required to be able to acquire and process real time data. It is also required to control related instruments to change those environmental factors and monitoring in long distance so that it realizes modern, intelligent and accurate control. The main aim of the project is to develop an embedded web system using ARM11 processor and real time operating system, which enables data acquisition and status monitoring with the help of any standard web browser.

The wired Industrial parameters monitoring system of highly expansive and always needs large installation space to deploy. The WSN consist of sensor to continuously sense various physical parameters of industry such as temperature, humidity, lightening, vibration’s users processor interface system with Raspberry pi which is low cost and consumes small amount of power .The sensor data received and process by Raspberry pi by using Python programming and send sensor information to cloud server via internet. On cloud server, user with server account can access real time WSN data and view graphically. In this project an email alert also developed .When WSN detect critical values of sensor data to predict upcoming accident and fault at machineries in industry .The user can also access WSN for announcement when damage and upcoming accidents predicted.

**Block Diagram**

**Hardware Used:**

* Raspberry pi3 Board
* Temperature Sensor
* Humidity sensor
* Machine Fault detector circuit
* Power Bank (Power supply)
* 9V Batteries
* Jumper wires
* Bread Board
* LEDs
* Smart Phone
* 32GB SD Card
* Wifi modem

**Software Used:**

* RTOS (Raspbian Operating System)
* Python IDE
* Python programming
* HTML and Java Script for frontend webpage design
* PHP and python programming for backend programming
* Apache web server
* Cloud server for IOT