



IOT Based Involve Real Time Control Water Treatment Plant using Ph Meter

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ABSTRACT

This paper presents an internet of thing (IOT) based innovative real time PH monitoring and control of municipal waste water for agriculture and gardening application. During the last few decades after the green revolution in India, water requirement is increased exponentially in all sectors viz. The demand and supply relationship is very essential for every country in present time. Water is necessary for the survival of the human being on the earth. So for the survival the conservation and management of the available water resource are also equally important. Moreover, for the healthier society, the access of the clean and safe water resource is also imperative. This paper describes a smart solution to control the water quality through its PH. The idea is to develop a low-cost electronic system and its application with such a quality of maintaining (monitoring and control) the water quality within the prescribed standard

Keywords: - IOT ,PH METER,PIC CONTROLLER

Introduction:-

- Real time measurement of pH and temperature as well as the adjustment are performed through the chemical reactions by the control through microprocessor automatically.
- This communication deals with the main idea for the development of such product is low product cost, easy installation, handling and monitoring of the data online low maintenance and maintenance cost as well as the development of interdisciplinary kind work that includes the sample collection and online raw calculation, analysis, control through the chemistry and computer programming.
- The development of the internal of things IoT based innovative real time pH monitoring and control of municipal waste Water for agriculture and gardening application.
- Thus, the water quality for the agriculture and gardening is to maintain the pH of treated municipal waste water.

Block Diagram :-

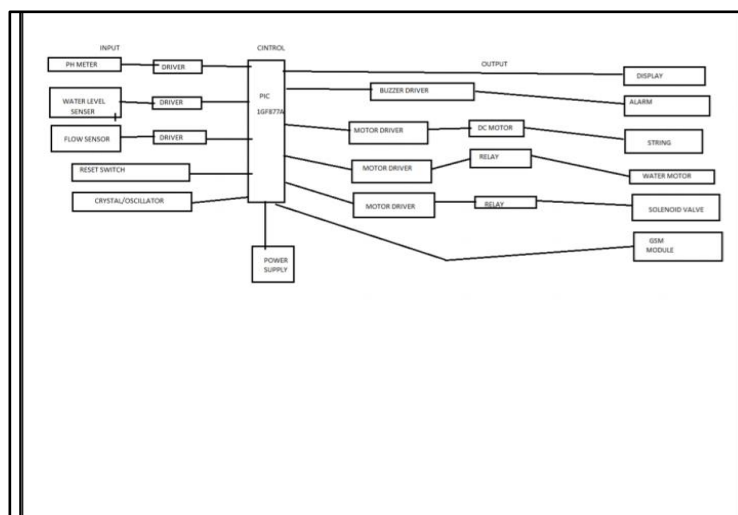


Figure No.1

Working :-

When Machine is On, LCD Display Show All Characters Regarding Our Project like Brand Name, Next work Process, Percent working status, and other. When PIC controller 16f877A Start program execution, they run all hardware as per programming process or stages First process is water level sensor check the water level and send signal to mobile app using Bluetooth and they start motor M1 to fill up water tank. When water is rich at top level , same time sensor will detect this water level and suddenly Cut off the motor with data transmission through Bluetooth. After that PH meter will check the water quality and they start 2nd motor for chemical string , After that process same way Bluetooth will send again data serially to android app. Next, when all working process completed , display shown “ now water is ready to drink” . if Some have hot water for drinking , then we also provide heater for water treatment as a option. So we finally concluded that , our project IOT Based innovative Water Treatment plant with PH meter and android app will work Smartly, Innovatively with great future scope for healthy life of human.

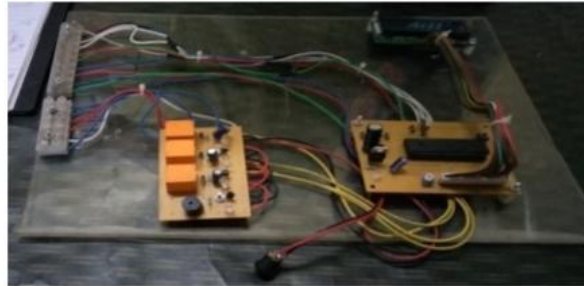


Figure no 2 model

Hardware requirement:-

1. Sensor
2. Ph meter
3. PIC controller
4. Water flow sensor

Advantages:

1. Power Saver:- Living in an age where we need to be more conscious of the energy that we use, a water level controller is ideal at saving power.
2. Money Saver:- A water level controller helps save money by limiting the waste of water and electricity.
3. Automatic:- Another notable advantage with these devices is that they regulate on their own.

Future Scope :

Drinking Water and Wastewater Treatment Plant Operators. Ever consider a career as a drinking water or wastewater treatment plant operator? According to the Bureau of Labor Statistics, job prospects are expected to be excellent in the coming decade with a projected growth of 8% through 2022

Applications:

- 1) It protects drinking water resources.
- 2) Minimize health risk and water pollution.
- 3) Reduce the need for costly water supply and new wastewater treatment facilities.

4) It helps in improving the quality of drinking water.

Temperature Sensor:-

The temperature sensor is used to monitor the coldness or hotness of the water, measured in degree Celsius, with precision of 0.1 steps, which is more accurate than the mercury thermostat.

The operation temperature range varies between -55 to 150 in this case the water degree is maintained between 25 to 30 degree Celsius, which this is the ideal temperature for human body usage.

PH Sensor:-

The pH sensor is used to monitor the acidity and alkalinity in water, it is designed to give a value from 0 to 14 according to the hydrogen ions concentration with the negative logarithmic, in this case the water pH is maintained between 6 to 8.5, which this is the acceptable limits for the human body to be consumed.

Conclusion:-

The introduction of an efficient smart water quality monitoring system, aims to eliminate the cost of the water samples analysis at off line lab. In addition, giving a clear indication of the water quality factors to avoid any diseases effects public health and the cost of controlling the quality of the consumed water.

This system support the concept of a smart city that does not require human interactions and reduce the labor and operation costs. also utilizes the different filters used to enhance the water quality in an efficient way. As the filters will only be used once needed and not all the time.

In addition, the limitation to keep this system a low cost model to spread widely in different areas of interest.

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