LITERATURE SURVEY

Real-Time River Water Quality Monitoring and Control System

Team ID - PNT2022TMID44989

1. IOT based Think Speak application for monitoring the quality of the water

Pasika and Gandla

The monitoring system which consists of a number of sensors used to measure several quality parameters like turbidity, pH value, water level in the tank, dampness of the adjoining environment and temperature of the water. The sensors are interfaced with the Microcontroller Unit (MCU) and additional processing is executed by the Personal Computer (PC). The acquired data will be directed to the cloud by means of Internet of Things (IoT) based Think Speak application for monitoring the quality of the water under test. As a future directive, work should be extended for analyzing some other parameters such as nitrates, electrical conductivity, dissolved oxygen in the water and free residual chlorine.

2. Solar powered water quality monitoring system using wireless sensor network

M. Kulkarni Amruta and M. Turkane Satish
Published on 2013 by IEEE

The idea of 'Underwater Wireless Sensor Network' (UWSN) is the basic building block of a water quality monitoring using wireless sensor network (WSN) technology powered by solar panel. To monitor water

quality over different sites as a real-time application, an excellent system architecture constituted by distributed sensor nodes and a base station is suggested. The nodes and base station are connected using WSN technology like Zigbee. Design and implementation of a prototype model using one node powered by solar cell and WSN technology is the challenging work. Data collected by various sensors at the node side such as pH, turbidity and oxygen level is sent via WSN to the base station. Data collected from the remote site can be displayed in visual format as well as it can be analyzed using different simulation tools at base station. This novel system has advantages such as no carbon emission, low power consumption, more flexible to deploy at remote site and so on.

3. IOT based Smart Water Quality Monitoring System

Monjra Mukta, Samia Islam and M.S.H. Khan

Published on 1 Feb 2019 (4th ICCCS)

This paper represents an IOT based smart water quality monitoring(SWQM) system aids in continuous measurement of water condition based on four physical parameters i.e., temperature, Ph, electric conductivity and turbidity properties. Four sensors are connected with Arduino-uno in discrete way to detect the water parameters. Extracted data from the sensors are transmitted to a desktop application developed in NET platform and compared with the WHO standard values. Based on the measured result, the proposed SWQM system can successfully analyze the water parameters using fast forest binary classifier to classify whether the test water sample is drinkable or not.

4. Design and Implementation of Real Time Approach for the Monitoring of Water Quality Parameters

Siti Aishah Binti Makhtar, Norhafizah Binti Burham, Anees Bt Abdul Aziz

Published on June 2022 by IEEE

This presented paperwork is to develop a smart water quality monitoring system using four sensors and an IoT platform to help determine water quality. It is to analyze the parameters of water samples such as tap water, coway water, river water, pond water, and lake water whether these water samples are in the threshold range for drinking or not. The device is initially used to measure pH, turbidity, total dissolved solids (TDS) and temperature, and then sent the information to the microcontroller Arduino Uno. Users can connect the device to a mobile phone via Bluetooth, and then an android-based mobile application called HC-05 Bluetooth Terminal displays real-time test data. These values of each parameter are also displayed on the I2C LCD screen connected to the microcontroller.

5. IoT and Cloud based water conservation and monitoring system

Avita Katal, Sharad Singhania and Sakshi Jain

Published on 26 Aug 2022 (ASIANCON)

There have been many researches whose major focus has been on water conservation but none of them provides with the plan on how to utilize water in an effective manner and minimize water wastage. The proposed system uses ultrasonic and water-level sensors to detect multiple metrics such as the vessel's water level as well as the individual ’s daily water consumption. These sensors are connected to

the Node Microcontroller Unit (NodeMCU), which performs additional computations. The real time data collected is uploaded to the database. A self-designed web application is used to show the water usage, alerts in case of water wastage and the recommendations to users in order to help them planning better water utilization.