IDEATION PHASE

LITERATURE SURVEY

Assignment Date	19 September, 2022
Team ID	PNT2022TMID19880
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 marks

ABSTRACT:

The current water quality monitoring system is a manual system with a monotonous process and is very time consuming. This paper proposes a sensor-based water quality monitoring system. The main components of a wireless sensor network (WSN) include a microcontroller for system processing, a communication system for inter-node and intra-node communication, and several sensors. Real-time data can be accessed using remote monitoring and Internet of Things (IoT) technology. Data collected at a separate location can be displayed in a visual format on a server PC using Spark streaming analysis via Spark MLlib, Deep Learning Neuron Network Models, Belief Rule Based (BRB) system and is also compared to standard values. If the measured value is above the threshold, an automatic warning SMS notification will be sent to the agent. The uniqueness of our proposed article is to obtain a water monitoring system with high frequency, high mobility, and low power. Therefore, our proposed system will immensely help the Bangladeshi population to become aware of contaminated water and stop polluting it.

Water Quality Monitoring System Based on IOT

Vaishnavi V. Daigavane, D. M. Gaikwad, Computer Science, 2017

Water pollution is one of the biggest fears for the green globalization. In order to ensure the safe supply of the drinking water the quality needs to be monitor in real time. In this paper we present a design and development of a low cost system for real time monitoring of the water quality in IOT(internet of things).The system consist of several sensors is used to measuring physical and chemical parameters of the water. The parameters such as temperature, PH, turbidity, flow sensor of the water can be measured. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. Finally, the sensor data can be viewed on internet using WI-FI system.

Remote monitoring of waters quality from reservoirs

Sona R. Pawara, Siddhi Nalam, Saurabh Mirajkar, S. Gujar, Vaishali Nagmoti, Environmental Science, 2017 2nd International Conference for Convergence in Technology (I2CT)

Water bodies have seen a rise in chemical pollutants in recent years. Therefore quality testing has become an essential part of treatment. Currently in India, monitoring of water quality is done by physically going to water bodies and collecting samples which are then sent to be tested in laboratories. This is time consuming and inefficient method. To automate this process, water quality monitoring sensors, arduino IDE and RF module are placed in water sources. The sensors gather data like pH, temperature and turbidity which is forwarded to arduino IDE for binary to digital conversion. This data is transferred by radio frequency transmitter module to the lab, thus eliminating the need of physically going to the water bodies, ensuring real time on demand data of contamination level and also acts aswarning system for hazardous levels of contaminants.

Internet of things enabled real time water quality monitoring system

S. Geetha, S. Gouthami, Computer Science, 2016

Smart solutions for water quality monitoring are gaining importance with advancement in communication technology. This paper presents a detailed overview of recent works carried out in the field of smart water quality monitoring. Also, a power efficient, simpler solution for in-pipe water quality monitoring based on Internet of Things technology is presented. The model developed is used for testing water samples and the data uploaded over the Internet are analyzed. The system also provides an alert to a remote user, when there is a deviation of water quality parameters from the pre-defined set of standard values.

Design of Smart Sensors for Real-Time Water Quality Monitoring

Niel Andre Cloete, R. Malekian, Lakshmi Nair, Computer Science IEEE Access, 2016

This paper describes work that has been done on design and development of a water quality monitoring system. The system is able to measure the physiochemical parameters of water quality, such as flow, temperature, pH, conductivity, and the oxidation reduction potential. These physiochemical parameters are used to detect water contaminants. The sensors, which are designed from first principles and implemented with signal conditioning circuits, are connected to a microcontroller-based measuring node, which processes and analyzes the data. In this design, ZigBee receiver and transmitter modules are used for communication between the measuring and notification nodes. The notification node presents the reading of the sensors and outputs an audio alert when water quality parameters reach unsafe levels. The sensors are shown to work within their intended accuracy ranges. The measurement node is able to transmit data by ZigBee to the notification node for audio and visual display. The results demonstrate that the system is capable of reading physiochemical parameters, and can successfully process, transmit, and display the readings.