

## **Literature Survey**

### **Project title: Real time river water quality monitoring and control system**

#### **Survey 1:**

River water quality monitoring is the process of measuring the water quality parameters, such as temperature, pH, turbidity, dissolved oxygen levels, variety of ions present, and so on. The main objective of monitoring water quality is to ensure these parameters are within a suitable range. The traditional method of water monitoring was done physically, using only chemicals. A water quality monitoring application involves using different IoT-based smart sensors that keep track of the parameters in real-time. The hardware components used for this project are pH sensor, Ultrasonic sensor, Turbidity sensor, Thermometer sensor, RF module

Advantages: Pure water in healthcare facilities, A healthy water supply made possible.

Disadvantages: The waters in many supply systems have to be allocated based on past availability or existing consumer demand. The practice does not necessarily mean the allocation is proper. In fact, some supply systems can get overly crowded.

#### **Survey 2:**

A statistical model based on Internet of Things (IoT) for water quality analysis using different water quality parameters such as pH, conductivity, dissolved oxygen, temperature, biochemical oxygen demand, total dissolved solids and conductivity. These parameters are very important to assess the water quality of the river. The traditional manual technique that is under use is a very slow process. It requires staff to collect the water samples from the site and take them to the laboratory and then perform the analysis on various water parameters which is costly and time-consuming process.

Advantages: Aquatic life preservation practical, Achieve sustainability through LEED and/or WELL certifications.

Disadvantages: There are no specific management plans or sanctions on water extractions in many areas, such as pumping groundwater or rivers. These have caused less water to be

soluble and even led to the mining of that resource in some respects. This hampers the water levels and increases the risk of contaminated water.

#### **Survey 3:**

This research paper focuses on Wireless Sensor Network for River Water Quality Monitoring in India. This paper introduces a river water quality monitoring system based on wireless sensor network which helps in continuous and remote monitoring of the water quality data in India. The wireless sensor node in the system is designed for monitoring the pH of water, which is one of the main parameters that affect the quality of water.

Advantages:

Wireless sensor Network which aids in River Water Quality Monitoring. This paper also proposes a novel technique for the design of a water quality sensor node which can be used for monitoring the pH of water.

Disadvantages:

This paper focuses only on the pH of river water here the other parameters such as turbidity, conductivity and temperature are not considered.

#### **Survey 4:**

This research paper focuses on Detection on water pollution and water management using smart sensors. To ensure the safe supply of drinking water the quality should be monitored in real time for that purpose new approach IOT (Internet of Things) based water quality monitoring has been proposed. This system consists some sensors. Which measure the water quality parameter such as pH, turbidity, conductivity, dissolved oxygen, temperature. The measured values from the sensors are processed by microcontroller and these processed values are transmitted remotely to the core controller that is raspberry pi using Zigbee protocol.

Advantages:

Based on a study of existing water quality monitoring system and scenario of water we can say that proposed system is more suitable to monitor water quality parameters in real time.

#### **Survey 5:**

**Author:** J.Navarajan

Detection on water pollution and water management using smart sensors. To ensure the safe supply of drinking water the quality should be monitored in real time for that purpose new approach IOT (Internet of Things) based water quality monitoring has been proposed. This system consists some sensors. Which measure the water quality parameter such as pH, turbidity, conductivity, dissolved oxygen, temperature. The measured values from the sensors are processed by microcontroller and these processed values are transmitted remotely to the core controller that is raspberry pi using Zigbee protocol. Based on a study of existing water quality monitoring system and scenario of water we can say that proposed system is more suitable to monitor water quality parameters in real time. Based on a study of existing water quality monitoring system and scenario of water we can say that proposed system is more suitable to monitor water quality parameters in real time.

## **Survey 6:**

**Author:** NatasaMarkovic

Sensor Web for River Water Pollution Monitoring and Alert SystemSensor Web has provided infrastructure for collecting and processing data from distributed and heterogeneous sensors. This set of technologies has found various implementations, especially in the area of environmental monitoring. The Sensor Web architecture for crisis management, described in this paper, provides active monitoring of measuring parameters and timely responses in cases of environmental disasters. The River Water Management and Alert System built on this architecture enable access, control and management of river water pollution

## **Advantages and Disadvantages :**

Existing system has a mechanisms which are semi-automated or manually controlled devices which are to be handled by a person responsible for monitoring the water quality. There is need to have human intervention in taking various reading of the water parameters. The instruments or tools are used either by putting/inserting a water sensing part into water and seeing the result on small display device or by directly inserting a portable device in water and watching the output on the display. Central Water Commission (CWC) monitors water quality, by collecting samples from representative locations within the processing and distribution system. These samples are analyzed at the well-equipped laboratories. At these laboratories, samples of raw water, filter water and treated water are taken for analysis, these analysis can be performed by human intervention which for specific period only. The disadvantage of this system is, water is not monitoring seamlessly, and it always needs a human intervention.

## **Survey 7:**

This research paper focuses on Sensor Web for River Water Pollution Monitoring and Alert System. Sensor Web has provided infrastructure for collecting and processing data from distributed and heterogeneous sensors. This set of technologies has found various implementations, especially in the area of environmental monitoring. The Sensor Web architecture for crisis management, described in this paper, provides active monitoring of measuring parameters and timely responses in cases of environmental disasters.

Advantages:

The River Water Management and Alert System built on this architecture enable access, control and management of river water pollution.

### **Survey 8:**

This research paper focuses on Wireless Sensor Network for River Water Quality Monitoring in India. This paper introduces a river water quality monitoring system based on wireless sensor network which helps in continuous and remote monitoring of the water quality data in India. The wireless sensor node in the system is designed for monitoring the pH of water, which is one of the main parameters that affect the quality of water. Wireless sensor Network which aids in River Water Quality Monitoring.

Advantages:

This paper proposes a novel technique for the design of a water quality sensor node which can be used for monitoring the pH of water.