LITERATURE SURVEY

Date	19 September 2022
Team ID	PNT2022TMID06691
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 Marks

1) A Development and Implementation of Water Quality Assessment Monitoring (WQAM) System using the Internet of Things (IoT) in Water Environment

Muhammad Farhan Johan, S. Abdullah, A. Zanal Saurabh S. Soman, Hamidreza Zareipour , Om Malik

JEVA , 23 November 2021

This paper presents the development and implementation of Water Quality Assessment and Monitoring (WQAM) system. The system development used Wi-Fi enabled microcontroller to connect with the IoT environment and store the data in the IoT cloud server. The microcontroller used is Arduino UNO that interacts with three types of sensor probes which are pH, turbidity and temperature probe. All the data measurements is transferred using a Wi-Fi module which is ESP8266. The IoT cloud used to utilize the data frame is Thing Speak. This system was implemented on Bandar Pereda Lake and Deraa River in Pulao Pinang with two systems implemented at each location. The sensors were placed on the water surface for more accurate measurements. This system continuously measures the readings of pH, turbidity dan temperature on the lake/river for every 1 hour. Twenty readings were taken for every 1 hour within the first 20 minutes with 1 minute interval and the readings were stored in the IoT cloud server.

2) Forecasting of Wind Turbine Output Power Using Machine learning

Haroon Rashid; Waqar Haider; Canras Batunlu

IEEE, 2020

In this paper, an attempt has been made to develop a statistical model based on Internet of Things (IoT) for water quality analysis of river Krishna 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 water quality data were collected from six stations of river Krishna in the state of Karnataka. River Krishna is the fourth largest river in India with approximately 1400 km of length and flows from its origin toward Bay of Bengal. In our study, we have considered only stretch of river Krishna

flowing in state of Karnataka, i.e., length of about 483 km. In recent years, the mineral-rich river basin is subjected to rapid industrialization, thus polluting the river basin.

3) An IoT Based Smart Water Quality Monitoring System using Cloud

Ajith Jerom B.; R. Manimegalai; R. Manimegalai

IEEE – April 2020

Other sources of pollution include agricultural runoff and unregulated small scale industry that results in polluting, most of the rivers, lakes and surface water in India. In this paper, An IoT Based Smart Water Quality Monitoring System using Cloud and Deep Learning is proposed to monitor the quality of the water in water-bodies. In conventional systems, the monitoring process involves the manual collection of sample water from various regions, followed by laboratory testing and analysis. This process is ineffective, as this process is arduous and time-consuming and it does not provide real-time results. The quality of water should be monitored continuously, to ensure the safe supply of water from any water bodies and water resources. Hence, the design and development of a low-cost system for real-time monitoring of water quality using the Internet of Things (IoT) is essential. Monitoring water quality in water bodies using Internet of Things (IoT) helps in combating environmental issues and improving the health and living standards of all living things.

4) IoT-based System for Real-time Water Pollution Monitoring of Rivers

Mohammad Ariful Islam Khan; Mohammad Akidul Hoque; Sabbir Ahmed

IEEE September 2021

The research proposes a system to remotely monitor the water quality of a river so that the authorities can gather better insights about the condition of that particular river and predict the critical future phenomena. Consequently, they will be able to take auspicious steps in order to protect the rivers and save the environment. The proposed framework can observe the real-time value of pH, conductivity, turbidity, temperature and flow of the water by utilizing various sensors. Furthermore, through our device, effective predictions about imminent floods can be made. Thus, authorities can commence early warning for floods and ensure prompt evacuation. Thus, our technique can significantly minimize the casualties caused by this disaster. In this context, real-time feeds are obtained through Internet of Things (IoT). For wireless data transmission Message Queuing Telemetry Transport (MQTT) is used.

5) IoT Based Real-time River Water Quality Monitoring System

Mohammad Salah UddinChowdury, Talha BinEmran

Science Direct – 2018

This paper proposes a sensor-based water quality monitoring system. The main components of Wireless Sensor Network (WSN) include a microcontroller for processing the system, communication system for inter and intra node communication and several sensors. Real-time data access can be done by using remote monitoring and Internet of Things (IoT) technology.

6) 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

IEEE - June 2022

Access to safe drinking water is essential to nurturing human life on earth. Polluted air and unsanitary water can cause health problems. Unhygienic water can cause stomach and health-related problems. A specific range of water quality parameters, mainly temperature, pH, total dissolved solids (TDS) and turbidity, can degrade the growth of this bacteria. 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 analyse the parameters of water samples such as tap water, co way 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.