LITERATURE SURVEY

Project Title : Real-Time River Water Quality Monitoring and Control System

Category : **Internet of Things (IoT)**

Team ID : **PNT2022TMID05726**

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INTRODUCTION:

Water is one of the major compounds that profoundly influence ecosystem. But, nowadays it is been exploited heavily due to rapid industrialization, human waste and random use of pesticides and chemical fertilizers in agriculture, which leads to watercontamination. Thus, a water monitoring system is necessary to observe the water quality in a large area such as lake, river, and aquaculture. As per the current world situation, Internet of Things (IoT) is used in heterogeneous areas of research for supervising, congregate and analyzing data from the remote locations.

OBJECTIVE:

The objective of this project is to obtain quantitative information on the physical, chemical, and biological characteristics of water. Objectives and purposes range from detection of drinking water standard violations to determination of the environmental state and analysis of temporal water quality trends. Three categories of monitoring can be identified: (1) routine surface water monitoring, (2) periodic special surveys, and (3) special surveys performed to assess the extent of a pollution problem .

LITERATURE SURVEY:

[1] Literature Survey on Smart Water Quality Monitoring System by Kumar K

Water quality observing is the gathering of data from the suggested framework dispatched at the set areas at a standard interim of time, with a precise goal to give the constant information which will be utilized to characterize the ebb and flow conditions. The primary point of constant water quality observing framework incorporates the valuation of water quality parameters, for example, physical, substance properties, with a definite goal to recognize the varieties in water parameters and to give an early cautioning of the dangers.

[2] Reconfigurable Smart Water Quality Monitoring System in IoT Environment by Cho Zin Myint*, Lenin Gopal*, and Yan Lin Aung† in 2017

Since the effective and efficient system of water quality monitoring (WQM) are critical implementation for the issue of polluted water globally, with increasing in the development of Wireless Sensor Network (WSN) technology in the Internet of Things (IoT) environment, real time water quality monitoring is remotely monitored by means of real-time data acquisition, transmission and processing. This paper presents a reconfigurable smart sensor interface device for water quality monitoring system in an IoT environment. The smart WQM system consists of Field Programmable Gate Array (FPGA) design board, sensors, Zigbee based wireless communication module and personal computer (PC). The FPGA board is the core component of the proposed system and it is programmed in very high speed integrated circuit hardware description language (VHDL) and C programming language using Quartus II software and Qsys tool. The proposed WQM system collects the five parameters of water data such as water pH, water level, turbidity, carbon dioxide (CO2) on the surface of water and water temperature in parallel and in real time basis with high speed from multiple different sensor nodes.

[3] Internet of things enabled real time water quality monitoring system by Geetha S and Gowthami in 2017.

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.

[4] Real time water quality monitoring network by Mrs. M Madhuram, Priyanka Nath, P.Geeta, Ananya Tamuli Saikiah. Murad In 2021

Water has been one of the most integral resources ever since human civilization came into existence. It is thus known how important water is in day to day life. Other than domestic purposes, we see its importance even in the industrial field. Water is an excellent coolant and thus used by most industries for cooling machineries. Water is of prime importance even to the agricultural field. Pharmaceuticals and beverage manufacturers also count on such standalone water purification techniques to meet their daily ends. As a result, these critical machines keep running 24/7. This becomes a considerable burden for both supplier and companies depending on them. The traditional techniques to test water quality was by sending water samples to labs manually. This method was too tedious and wastage of man power and was not economical.

REFERENCES:

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[2] Sona Pawara, Siddhi Nalam, Saurabh Mirajkar,ShrutiGujarVaishali Nagmoti Remote Monitoring of WatersQuality from Reservoirs 2017 2nd InternationalConference for Convergence in Technology (I2CT).

[3] S. P. Gorde, M. V. Jadhav "Assessment of Water Quality Parameters: A Review", S. P. Gorde et al Int. Journal of Engineering Research and Applications ,ISSN : 2248-9622,Vol. 3, Issue 6, Nov-Dec 2013, pp.2029-2035.

[4] S. Geetha and S. Gouthami," Internet of things enabled realtime water quality monitoring system", Springer open(2017) 2:1 DOI 10.1186/s40713-017-0005-y.

[5] Aravinda S. Rao, Stephen Martial, JayavardhanaGubbi, MarimuthuPalani Swami, "Design of low-cost autonomouswater quality monitoring system", 2013 IEEE, pp. 14-19.