Real-Time River Water Quality Monitoring and Control System

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LITERATURE SURVEY :-

Pranita Mahajan Published on "International Conference on IoT based Control Networks and Intelligent Systems (ICICNIS 2020)".The quality of potable water is crucial for socioeconomic factors. To guarantee the purity of drinking water, many researchers created numerous techniques. Manual sample collection and laboratory manual analysis are how the conventional system operates.creating lag time and human mistake. The analysis is not performed at the user location, thus existing systems may slow operations while reducing errors.Users require a system that will dynamically monitor and guarantee water quality. The suggested system has a number of sensors to Based on pH, temperature, conductivity, turbidity, ORP, nitrate, and free residual chlorine, evaluate and confirm the water's quality.Sensors gather data, which is then sent for additional processing. General users can use the system's LEDs to Determine the water's purity right away.

Mrs. R.J. Sapkal Published on "INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY".This essay explains The key drivers behind the requirement for effective and efficient water level monitoring and regulation of water quality in flat systems are to maintain the sustainability and health of the human resource base and to minimise the consumption of water for domestic use.

The water system has a significant negative impact on the natural environment as a result of climate change and fluctuation. Only in water laboratories are incredible methods for sample collection, testing, and analysis used.However, gathering, analysing, and quickly disseminating information to the appropriate people so they may make informed decisions when they are needed is not always simple. This research presents a water sensor system prototype for societal water level and quality monitoring.

Shudong Wang Published on College of Electrical and Information Engineering, Lanzhou University of Technology, Lanzhou,Gansu, 730050, China Real-time monitoring of water quality is essential since human activity and production have contributed to varied degrees of water contamination since the turn of the twenty-first century. The approach for monitoring three water quality parameters—water temperature, PH level, and turbidity—that is suggested in this research is based on STM32. The STM32 series single-chip microcomputer's extended circuit, which includes PH sensor control circuit module, temperature sensor circuit module, wireless network communication circuit module, turbidity sensor circuit module, etc., serves as the foundation for the water quality monitoring technique. Then, using the C programming language, the PC programme created using the virtual instrument design language platform and the MCU data acquisition programme were created.

A.N.Prasad Published on School of Engineering and Physics,University of the South Pacific,Laucala, Fiji Islands Modern research uses remote sensing (RS) and internet of things (IoT) technologies to monitor, gather, and analyse data from far-off sites. The quality of water that is available to people has significantly declined as a result of the enormous rise in global industrial output, rural-urban migration, overuse of land and marine resources, and other factors. The widespread use of fertilisers in agriculture as well as other chemicals in industries like mining and construction has significantly lowered the quality of water worldwide. Water is a need for human survival, hence measures must be taken to

rigorously monitor its quality before it is made available for consumption in a community.

N. Thirupathi Rao Published on International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-5 March, 2019.The manual laboratory testing of samples for drinking water quality characteristics like turbidity, pH, conductivity, and temperature, among others, might take time. In order to address this, an effort has been made to design a smart and affordable IoT system in the current paper.Temperature, turbidity, pH, and conductivity are the variables taken into account when evaluating the water quality. The aforementioned metrics are measured using sensors submerged in water samples.The Raspberry Pi Unit received the detected data from the sensors. The parameters of the sensed data were compared to the baseline values included in the Raspberry Pi unit. The IOT can access the data on the Raspberry Pi device (cloud).

Phil Jordan Published on School of Geography and Environmental Sciences, Ulster University, Coleraine, United Kingdom, 2 Agri-Environment Branch, Agri-Food and Biosciences Institute, Belfast, United KingdomAfter a series of study visits, this paper examines improved methods for monitoring river water quality in north-western Europe (11 sites in 7 countries). Options were developed and assessed for their potential to meet specific water quality monitoring objectives with an emphasis on bringing about behavioural change based on the data gained. Numerous parameters and nutrients were sampled in sub-hourly intervals in autonomous, high-specification, bank-side or mobile laboratories as part of the monitoring programmes, which ranged from increased grab sampling and laboratory analysis to these programmes. Out of all the cases analysed, only one programme was able to quickly pinpoint the influences that had led to stakeholders' changing behaviour. This was mostly due to the other initiatives' emphasis on top-down policy reform or surveillance rather than their targeted approach to behaviour change.

Vaishnavi V Published on Department Electronics & Telecommunication Engineering, Mtech(VLSI), Bapurao Deshmukh College of Engineering,Sevagram, wardha_442102(M.S.), India.One of the main concerns for the green globalisation is water contamination. Real-time quality monitoring is required to guarantee the supply of drinking water is secure. In this study, we propose the design and creation of a low cost system for internet of things (IoT) real-time water quality monitoring. The system, which consists of numerous sensors, is used to measure the water's physical and chemical characteristics. It is possible to measure the water's parameters, including temperature, PH, turbidity, and flow sensor. The core controller is capable of processing the measured values from the sensors. A core controller can be created using the Arduino model. Finally, utilising a WI-FI setup, the sensor data may be seen online.

Alexander T. Demetillo Published on School of Engineering, University of San Carlos, Cebu City 6000, Philippines.An affordable, real-time water quality monitoring system that can be used in far-off rivers, lakes, coastal areas, and other water bodies is presented in this study. Off-the-shelf electrochemical sensors, a microcontroller, a wireless communication system, and the bespoke buoy make up the system's basic components. It measures pH, dissolved oxygen, and water temperature during a pre-set time period. To better serve interested end users, the built prototype disseminates the obtained data in graphical and tabular representations via a tailored web-based portal and preregistered mobile phones. The stability of the buoy in challenging environmental circumstances, system energy consumption, data transmission effectiveness, and web-based information display were all rigorously assessed to test the system's efficacy.

Mithila Barabde Published on International Journal of Innovative Research in Computer and Communication Engineering One of the main concerns for the green globalisation is water contamination. Water characteristics including pH,

turbidity, conductivity, and other variables must first be estimated in order to prevent pollution because variations in these parameters' values indicate the presence of contaminants. Water parameters are currently determined using chemical tests or laboratory tests, where the testing apparatus is stationary and samples are fed into the apparatus. As a result, the current technique for checking the quality of the water is manual, laborious, and time-consuming. The testing instrument can be submerged in river water to increase frequency, and remote pollution detection is also an option. A sensor-based water quality monitoring system is suggested in this research.

Deepthi N Published on International Journal of Progressive Research in Science and Engineering ,Volume-1, Issue-4, July-2020 .To confirm if the quality of the water is good or not, the quality should be adequately monitored. In this method, we discuss a plan and the creation of a low-cost system for assessing the water quality utilising internet of things technology. The most useful tools we utilised to measure various water properties were the sensors. Here, the primary variables are PH, temperature, and turbidity. We will use the core controller to monitor the values when we have obtained them from the various sensors.Keywords: sensors, core controller, PH, turbidity, temperature, IOT.