

A REVIEW PAPER ON WATER QUALITY MONITORING SYSTEM

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Abstract

Water pollution is one of the biggest threats for the green globalization. Water pollution affects human health by causing waterborne diseases. To prevent the water pollution, necessary steps are to be taken. First step is to estimate the water parameters like pH, turbidity, conductivity etc., as the variations in the values of these parameters point towards the presence of pollutants. In the present scenario, water parameters are detected by chemical tester laboratory tests, where the testing equipment are stationary and samples are provided to testing equipment. Thus, it is a manual system with a tedious process and is very time consuming. In order to minimize the time and to make the system automated, the testing equipment can be placed in the river water and detection of pollution can be made remotely. To ensure the safe supply of drinking water, the quality should be monitored in real time for that purpose Arduino based water quality monitoring has been proposed. In this report, the design of an Arduino based water quality monitoring system that monitors the quality of water in real time is presented.

Keywords: Dissolved oxygen, Turbidity, Conductivity, pH, Water quality monitoring.

Introduction

Water is a key natural resource for human survival. Water plays a vital role in sanitation for our rural and urban communities. Water is also an important economic resource. It is

necessary for all forms of agriculture and most of the industrial production processes. Water also provides a wide range of ecosystem and environmental services. It is essential for assimilation of pollution caused by industrial effluents and domestic sewage. Pressure on freshwater resources is increasing across the globe. During the first 8 decades of this century, consumption of water increased fivefold, 75 percent of which was during the second half of the century. From a macro perspective, the overall fresh water availability across the globe remains more or less constant. But, from a micro- perspective, the freshwater supplies in many regions and localities are dwindling due to alterations in hydrologic balances, over-exploitation and increasing pollution of freshwater reserves. Many third world countries are already facing serious water shortages. Increasing freshwater scarcity is becoming a major constraint in producing food for growing world population, ecosystem protection, and maintaining health, social and food security and peace among nations. India is not an exception to this impending crisis. The growing population, which is about to touch the billion mark, the preference for water intensive agriculture and rapid urban industrialisation are putting enormous pressure on the fragile freshwater resources. Growing water scarcity problems pose serious threat to ecosystem management, social sustainability and economic growth. Community

managed and indigenous system of water management existed in India for many centuries, meeting the irrigation, drinking and domestic water supply needs of the community.

Literature Of Review

1- Implementation of our system: In this Project, we have tested three water samples from three different water sources. We tested turbidity, conductivity, temperature and pH. If the ph value is above basic (means higher than 7) water is alkane. If it is below 7 the water is acidic. Low ph value chlorine and other disinfectants won't be as effective as it was for higher value. ph value higher than 7.8 can cause coldness in the water and scaling. Our system is working expectedly for the ph parameter. It is also fair to remark on the water sample of which pH value was low that it was not maintained regularly by the concerning authority. Adding substances such as sodium bi-sulphate and sodium bicarbonate for high and low PH value respectively can stabilize the ph level to normal. Results are displayed on the LCD and an SMS alert is sent to the authority.

2- Proposed System: The system we propose makes use of sensors for testing the water quality.. Unlike the existing systems in which the tester has to test the quality manually or the samples are sent to the laboratory. Arduino is used which has a good set of pins for sensors. It is also very less power consuming and manual or laboratory testing is not needed. We just have to set up the project and we can get the results.

Conclusion: Real time system for water quality measurement based on GSM is presented in this report. The system is incredibly versatile and economical. It is a real-time system that measures numerous parameters pertaining to the water and sends them to the water and sends them to the monitoring center. The system can monitor water quality automatically and it is low

in cost and doesn't need individuals on duty. The system has good flexibility. It is a versatile system, because of which simply by replacing the sensors and by making some changes within code, the system can be used to measure some other parameters of water. The system is reliable and easy to maintain and it can be extended to measure water pollution as well. By effectively using the proposed system, one can save time and cost can be reduced.

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