**Real-Time Water Quality Monitoring And Control System using Internet of Things**

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**ABSTRACT:**

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Manually acquiring water samples and shipping them to a lab for testing and analysis is the classic technique for identifying the quality of the water. This methodology burns manpower, takes a lot of time, and is not cost-effective. Through a combination of technologies (one for each parameter: pH, conductivity), the water performance assessment system that we have created monitors the quality of water in real time. temperature) to analyze the water's quality. The system's ZigBee module wirelessly provides sensor data to the microcontroller, and a GSM module wirelessly transmits data from the microcontroller to the smart phone/PC. In case someone tries to damage the water body, the device also features proximity sensors to inform the authorities by sending a message to them via the GSM module. This system can maintain a close watch on water resource contamination and be able to provide a setting for the production of clean drinking water.

A controller for system processing, a communication system for inter- and intra-node communication, and a nodes are the main elements of a wireless sensor network (WSN). Remote monitoring and Internet of Things (IoT) technology can be used to access real-time data. Our recommended article is unique in that it aspires to produce a water monitoring system with high frequency, high mobility, and low power. The manual, monotonous process of the system for monitoring water quality makes it particularly time-consuming. It suggests a water quality various sensors.

Drinking water varies from place to place, depending on the condition of the source water from which it is drawn and the treatment it receives, but it must meet EPA regulation. The traditional method of testing Turbidity, PH & Temperature is to collect samples manually and then send them to laboratory for analysis. However, it has been unable to meet the demands of water quality monitoring today. So a set of Monitoring of Turbidity, PH & Temperature of Water quality has been developed. The system consists of Turbidity, PH & Temperature sensor of water quality testing, single-chip microcontroller data acquisition module, information transmission module, monitoring center and other accessories. Turbidity, PH & Temperature of water are automatically detected under the control of single chip microcontroller all day. The single chip gets the data, and then processes and analyzes them. If the water quality is abnormal, the data will be sent to monitoring center and alert the public at the same time. It is convenient for management to take corresponding measures timely and be able to detect real-time situation of water quality remotely. The system has realized the automation of water quality monitoring intelligence of data analyzing and networking of information transferring. It is characterized by advantages of shortcut, accuracy and using manpower and material resources sparingly. The use of other technologies are having high cost associated with installation and calibration of a large distributed array of monitoring sensors. The existing technology will be suitable for particular area but it is not suitable for large system. By focusing on the above issues our paper propose a low cost system for real time monitoring of the water quality in IOT environment.