

PROPOSED SOLUTION FIT:

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TITLE	Real Time River Water Quality Monitoring and Control System
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MAXIMUM MARKS	2

SOLUTION FIT:

Taxonomy of research

In general water quality monitoring system consists of various sensors such a pH sensor, turbidity sensors, temperature sensors, conductivity sensors, humidity sensors and many other sensors . shows the general block diagram of smart water quality monitoring system. As shown in the figure, core controller forms the heart of the system. All the sensors are connected a core controller and this controller controls the operation, gets data from sensors, and compares it with that of the standard values and sends the values to the concerned end user or authorities through wireless modules

The core controller is integrated with various sensors such as pH sensor, conductivity sensor, temperature sensor, turbidity sensor and many sensors. The sensor leads are placed in the water to be tested. The sensor values will be processed by ADC and the core controller reads the value and it will be uploaded on the cloud. The values will be monitored continuously by checking whether the sensor value is greater than threshold or not. If the sensor value is greater than threshold, then it will be communicated to the concerned end user for further action. If sensor value is lesser than threshold, then the parameters are again checked for different water source.

Schematic analysis

The work consists of two parts, the first one is hardware & second one is software. The hardware part has sensors which help to measure the real time values, another one is arduino ATMEGA328 converts the analog values to digital and LCD shows the displays output from sensors, Wi-Fi module gives the connection between hardware and software. ATMEGA328 has inbuilt ADC and Wi-Fi modules.

The water quality parameters are checked by one by one and updated in the cloud server as well as the values are displayed in the LCD display

Discussion

Due to the limited drinking water resources, intensive money requirements, growing population, urban change in rural areas, and the excessive use of sea resources for salt extraction has significantly worsened the water quality available to people. A smart water quality monitoring system is an essential device which monitors the quality of water continuously.

Conclusion

Water Pollution is a major threat to any country, as it affects health, economy and spoils bio- diversity. In this work, causes and effects of water pollution is presented, as well as a comprehensive review of different methods of water quality monitoring and an efficient IoT based method for water quality monitoring has been discussed. Although there have been many excellent smart water quality monitoring systems, still the research area remains challenging. This work presents a review of the recent works carried out by the researchers in order to make water quality monitoring systems smart, low powered and highly efficient such that monitoring will be continuous and alerts/notifications will be sent to the concerned authorities for further processing. The developed model is cost effective and simple to use (flexible). Three water samples are tested and based on the results, the water can be classified whether it is drinkable or not.

As a future directive, the suggestion is to use latest sensors for detecting various other parameters of quality, use wireless communication standards for better communication and IoT to make a better system for water quality monitoring and the water resources can be made safe by immediate response.