PROJECT TOPIC

REAL - TIME RIVER WATER MONITORING AND CONTROL SYSTEMS

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ABSTRACT:

This paper deals with the system that is developed to measure the parameters of water such as turbidity, dissolved solvents, pH and temperature. The contamination level of water has been determined by comparing the obtained parameters with their respective ideal ranges. The sensors are interfaced with Arduino UNO and Raspberry Pi for data processing and transmission. The system is designed to float on the water body there by transmitting the measured data trough Wi-Fi to the remote place. The developed water quality monitoring system requires 17 Watts of on-board power and takes 8sec of time for complete processing of one set of data.Agricultural chemicals include fertilizers (nitrogen and phosphorus) and biocides (herbicides, fungicides and insecticides).

Environmental impacts in surface waters include algal blooms and disruption to ecological function. Strategies for protection of rivers from eutrophication include improved agricultural land management, conservation farming methods, recycling or retention of drainage and runoff water.The treatment processes were studied using ultrasonic frequencies; 20, 40 and 60 KHz at different time intervals namely 15, 30, 45 and 60 minutes. The study revealed that removal percentage of Total Coliform, Faecal Coliform and Faecal Streptococcus ranged between 5% - 46%. There was a positive correlation between ultrasonic intensity, sonication time and bacterial removal. There are clear morphological changes in the algal organisms without cell disruption especially green algae due to the release of photosynthetic pigments "Chlorophyll". No changes of chlorophyll "a" content were detected. Pretreated samples with 20, 40, and 60 KHz ultrasonic frequencies for 60 min decreased the alum dose by 6.7 %, 13.3 % and 20 % respectively.

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