



Design and Development of Smart Biomonitoring System using Internet of Things

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Abstract: The quality of water bodies has deteriorated over the years with the rapid growth of urbanization and industrialization, resulting in increased emission of pollutants into the ecosystem. This study proposes an effective technological solution to obtain the number of fishes in a water body and also the degree of pollution in the water body based on pH, turbidity and the total dissolved solids. The study area focuses on the Buckingham Canal, Chennai (Okkiyam Maduvu & Neelankarai stretch) which has turned into a main focal point of industrial and domestic sewage dumping. Water samples from the study area were collected and analysed for significant physio-chemical parameters to assess its suitability as a source of water for fish farming. The results of the analysis compared with optimum range values revealed that the pH was 6.63 within the acceptable range for fish farming. However, the pH value of 5.95, turbidity of 87 and 111 NTU and total dissolved solids of 954 and 1007 mg/L differ from the standard prescribed values. During the study, a web application was developed using Internet of Things (IoT) to effectively display the fisheries count and also the pH, turbidity and TDS values to the government officials and policy makers. This study will aid on the necessary treatment to improve the water quality in the Okkiyam Maduvu stretch so that the water can be used for fish farming.

Keywords: Aquatic pollution, Domestic sewage, pH, Turbidity, Total dissolved solids, Internet of things, Web application
