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Volume 8, Issue 4, August 2018, Pages 2503-2511Web based water turbidity monitoring and automated filtration system: IoT application in water management (Article) [\(Open Access\)](#)Noorjannah Ibrahim, S., Asnawi, A.L., Abdul Malik, N., Mohd Azmin, N.F., Jusoh, A.Z., Mohd Isa, F.N. 

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## Abstract

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
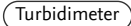
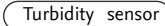
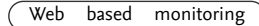
Water supplied to residential areas is prone to contaminants due to pipe residues and silt, and therefore resulted in cloudiness, unfavorable taste, and odor in water. Turbidity, a measure of water cloudiness, is one of the important factors for assessing water quality. This paper proposes a low-cost turbidity system based on a light detection unit to measure the cloudiness in water. The automated system uses Intel Galileo 2 as the microprocessor and a server for a web-based monitoring system. The turbidity detection unit consists of a Light Dependent Resistor (LDR) and a Light Emitting Diode (LED) inside a polyvinyl chloride (PVC) pipe. Turbidity readings were recorded for two different positionings; 90° and 180° between the detector (LDR) and the incident light (LED). Once the turbidity level reached a threshold level, the system will trigger the filtration process to clean the water. The voltage output captured from the designed system versus total suspended solid (TSS) in sample water is graphed and analyzed in two different conditions; in total darkness and in the present of ambient light. This paper also discusses and compares the results from the above-mentioned conditions when the system is submerged in still and flowing water. It was found that the trends of the plotted graph decline when the total suspended solid increased for both 90° and 180° detector turbidimeter in all conditions which imitate the trends of a commercial turbidimeter. By taking the consideration of the above findings, the design can be recommended for a low-cost real-time web-based monitoring system of the water quality in an IOT environment. © 2018 Institute of Advanced Engineering and Science. All rights reserved.

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