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Miniaturized Water Flow and Level Monitoring System for Flood Disaster Early Warning (Conference Paper)

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Abstract

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This study presents the performance of a prototype miniaturised water flow and water level monitoring sensor designed towards supporting flood disaster early warning systems. The design involved selection of sensors, coding to control the system mechanism, and automatic data logging and storage. During the design phase, the apparatus was constructed where all the components were assembled using locally sourced items. Subsequently, under controlled laboratory environment, the system was tested by running water through the inlet during which the flow rate and rising water levels are automatically recorded and stored in a database via Microsoft Excel using Coolterm software. The system is simulated such that the water level readings measured in centimeters is output in meters using a multiplicative of 10. A total number of 80 readings were analyzed to evaluate the performance of the system. The result shows that the system is sensitive to water level rise and yielded accurate measurement of water level. But, the flow rate fluctuates due to the manual water supply that produced inconsistent flow. It was also observed that the flow sensor has a duty cycle of 50% of operating time under normal condition which implies that the performance of the flow sensor is optimal. © Published under licence by IOP Publishing Ltd.

Author keywords

Early Warning System Flood Monitoring

Indexed keywords

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