

ARDUINO BASED SMART RAIN GUTTER FOR REDUCING MOSQUITO BREEDING

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Nowadays, some deadly and dangerous viruses are transmitted by mosquitoes, which endangers billions of lives around the world. The destruction of mosquito breeding places is an effective solution to reduce mosquito-borne diseases. Most mosquito breeding sites are located around human habitats and clogged rain gutters are prominent among them. Traditional rain gutters usually clog up by fallen tree leaves, which causes water retaining after rain. In this research, we have propounded a smart system capable of avoiding clogging of rain gutters and thereby the retention of rainwater along with debris. For this, we used an electronically rotatable rain gutter consists of a servo motor, which will be positioned in a direction so that water can be drained properly when raining and in other times, it will be positioned in the opposite direction which would retain nothing such as rainwater and debris. In this system, a water droplet sensor will identify the first drop of rainwater falls on the sensor surface, and an Arduino microcontroller controls the rain gutter using a servomotor, which allows the shaft to be positioned at various angles. Once the rain stops, rain gutter is repositioned to its opposite side. This system was tested under simulated environments and confirmed that it operated with an acceptable accuracy level with the minimal use of hardware resources to ensure that the cost of the system is feasible.

Keywords: Rain Gutter, Electronic Rain Gutter, Water Droplet Sensor, Mosquito Breeding