Abstract

Today, one of the worst diseases that many people are afflicted to is dengue. This has become alarming due to high recorded cases of the said disease on the year 2017. The research study was done to help alleviate cases of mosquito borne diseases by creating an automatic mosquito repellent diffuser. Citronella oil is the main ingredient that was used by the researchers in order to repel mosquitoes. By mixing citronella oil and water, the device is able to release the repellent. The device features an Arduino microcontroller to govern all the hardware components, an Android application for controlling the device operation, and a database for monitoring the operation of the device. The hardware components consist of a relay, ultrasonic sensors, diffuser, Liquid Crystal Display, and an RTC (Real Time Clock) module. The ultrasonic sensor is used to calculate the area of the room where the device is placed and the area calculated is then used to determine how the diffuser device will operate. Furthermore, the Liquid Crystal Display and the RTC Module are used to display and check the time. The android application will enable the user to set spray schedule, time intervals of diffuser operation, and additional device settings. Basically, the android application serves as the user's remote control for the device. The database, on the other hand, logs information about the device operation such as start operation time and room area calculated.