

ABSTRACT

Wiper is a glass cleaning tool on the front and rear of the car. *Wipers* are very helpful for car users when it is raining or when the windshield is dirty so that their vision is focused on the road and is not disturbed by rain water or dirt on the car glass. Because this can interfere with the driver who has to adjust the *wiper* as needed.

wipers are designed to work automatically when rain hits the windshield. The intensity of this rain is detected through the vibrations that arise in the car glass. For this reason, a piezoelectric sensor is attached to the windshield that can detect vibrations in the form of an analog signal output that is converted into a digital signal. Vibrations are detected by a piezoelectric sensor. In the design of *wipers* automatic *fuzzy logic* which classifies the speed of movement of the *wiper* automatically from the level of vibration on the windshield.

The system is designed to help car users stay focused on driving without adjusting the *wiper* when drizzling, moderate, and heavy rain occurs, with the average ADC threshold of the three sensors for each rain condition is 500 – 1300 for drizzling rain, 1300 – 3100 for moderate rain, and >3100 for heavy rain. In addition, the results of the speed experiment in RPM for drizzling rainfall are 411 rpm, moderate rainfall are 840 rpm, and heavy rainfall are 2600 rpm. In addition, the cable distance has no effect on the results of the ADC sensor value and the best sensor distance is 32cm.

Keywords: *Wiper, Fuzzy Logic, Raspberry Pi, Rain Intensity, Movement Speed, Windshield*