DESIGN OF AUTOMATIC ROAD CLEANER WITH ULTRASONIC SENSOR

Raisson Indra Hakim
Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : raissonindra@gmail.com

ABSTRACT

Highway cleaning workers are at great risk when cleaning roads in the traditional way, therefore the role of robots that can clean roads automatically is needed to reduce the risk of accidents and incidents that can be experienced by road cleaners. This research produces a prototype of a road cleaning robot that can be controlled automatically and manually. The robot moves using 2 wheels located on the back. The robot is equipped with a vacuum cleaner located at the top of the vehicle. The robot can run automatically using the help of 3 ultrasonic sensors located on the front of the robot with an average error of each ultrasonic sensor of 5.90%, 3.20% and 6.04%. Besides operating automatically, the robot can also be controlled manually via a connected smartphone using a Bluetooth connection. To increase the suction power of the suction machine, the author uses a cort nozzle connected to a DC motor and mounted vertically. The dirt that has been sucked in is then collected in a collection box located at the back of the Kort nozzle. From a series of tests that have been carried out, the robot can suck up dirt on the track that has been passed.

Keywords: *Kort nozzle, street cleaner, ultrasonic, dc motor*