

ABSTRACT

Currently people have started to switch to electric vehicles, besides being environmentally friendly they are also energy efficient. Electric vehicles have three main components, namely the BLDC motor which functions as a driving force, the controller as a regulator of the resulting rotation and the battery as an energy storage area.

Therefore, a system design is created to monitor and diagnose the motor so that it continues to work at its performance, besides that a tool is also needed to monitor the damage that occurs to the vehicle. The system will be combined with a controller which simultaneously controls and monitors the performance of each powertrain part of the electric vehicle.

The purpose of designing this system is to optimize battery usage, monitor and identify disturbances or damage to BLDC motors used in electric scooter. In addition, the analysis used is a fuzzy method that calculates the percentage of damage parameters that often occur, which aims to support the maintenance of the vehicle and make it easier for users to identify fault and damage that occurs in electric scooter.

Keywords: *(BLDC, Hall Sensor, Controller, Powertrain, Health Monitoring).*