

ABSTRACT

Braking is a vehicle deceleration process in which a mechanical system or electrical device impedes the motion and often requires fast and smooth engine braking. Braking can be applied electrically or mechanically or a combination of both. The electrical method is better than the mechanical method because in the mechanical method, the energy contained in the vehicle is wasted as heat. In regenerative braking, the kinetic energy of the rotating parts of the equipment is converted into electrical energy. In this study, the author discusses the advanced level of regenerative braking and its operation is carried out with the help of a dc engine. In this system, regenerative braking is carried out naturally so that it can stop at a certain time. At the output voltage generated during regenerative braking, there is a periodic decrease following the speed on the flywheel with a weight of 3 kg until it finally reaches 0 (stops). At the output current, there is an initial spike in the effect of a system that uses a switch, after a surge occurs it will go to an average value of 116 mA until it finally follows the voltage value which is getting lower and lower. In the output of the regenerative braking effect, a voltage above 2.8 V is needed to be able to enter the buckboost module and enter the battery, the higher the speed at the flywheel, the longer the time to charge the battery.

Keywords : *Braking, Regenerative, DC Motor, Mechanical, and Electrical*