Name : Mr.Narin Watanakul

Thesis Title : D.C. Chopper Drive for Electric Vehicle

Concentration : Electrical Engineering

Thesis Advisors : Asst. Prof. Dr. Somchai Chatrarattana,
Mr.Surapol Sinthuwanich

Academic year : 1993

## Abstract

The thesis aimed at investigating the application of the D.C.chopper drive in driving the electric vehicle.

The study consisted of using the constructed electric vehicle which has the following components: a 2.2 KW 36 VDC series magnetic circuit driving motor, a 200 A-hr 36 VDC lead - acid battery. The 1,060 x 2,225 millimetre vehicle is composed of a propeller shaft, gears, shock absorbers and oil braking system. The total weight is 605 kilogrammes.

The vehicle with D.C. chopper drive with roller load, was tested with reference to direct mechanical system. The results of the experiment showed that the D.C. chopper driving electric vehicle could work for 6.28 minutes more than the reference-base system in the same distance and save 70 % energy at starting period.

In general, the D.C. chopper has the highest speed of 35 km/hr., the accelerating speed of 0 - 30 km/hr in 10 sseconds, and the distance of 30-35 km/one power charge.

The advantage in energy saving gained from D.C.chopper drive is not clearly seen in this investigation.This is due to the fact that even with D.C.chopper drive, the power is transmitted through low efficiency mechanical transmission system. It is recommended that direct drive system should be employed in eletric vehicle in order to reduce losses and get full benefit from inherited variable speed D.C.chopper drive