ABSTRACT

Global warming have already being a major environment problem in each country in the whole world. There are many vital effect that caused by global warming, they are global temperatures rise evenly, rising seas, and air pollution are increasingly out of control. In addition, for developing countries, one of which Indonesia, today people worry about the rising price of fuel oil which is considered very harmful, especially for users of motor vehicles.

This Final Project aims to design and implement the electric car with utilize control the motor rotation speed and direction of Direct Current (DC) brushless 3-phase. This electric car is expected to become one of the environmentally friendly technology innovations that are not dependent on the use of fuel oil.

In this system, is used a DC motor brushless 3-phase as one of the two major drivers on the right side of rear tires, four 12 Volt dry batteries as a power supply, an inverter bridge circuit, and two sismin ATMEGA 8535 as well as controller driver that works to control the speed and direction of rotation of the brushless DC motors. To estimate the rotor position feedback is used hall effect magnetic sensors. Then, to control the speed of the brushless DC motor used 3-phase Proportional Integral Derivative (PID) methods, while the implementation both of microcontroller and software are used the C programming language.

Key Words: electric car, speed control, direction of rotation, DC motors brushless 3-phase, Proportional Integral Derivative (PID).