

ABSTRACT

Technology advances in the field of automotive particularly electric cars result in more efficient and optimum use of resources than gasoline-powered engine and the research continues to grow now. To improve the efficiency and optimization of the function, a system to control the electric motor operating as a driver of the electric car is required. Electric motors used were Brushless Direct Current (BLDC) motors. It is extensively used in many industries compared to other types of motors for its various advantages. However, it has an imperfection in speed control.

Accordingly, the authors were interested to produce an innovation to overcome the problem by designing three-phase motor driver as speed control for BLDC motor on electric car to set the motor rotation so that speed can be varied. This three-phase motor driver was consisted of Arduino Uno microcontroller and a three-phase inverter circuit using IRF3205 mosfet. The Arduino Uno microcontroller was used as a mosfet ignition on the three-phase inverter circuit.

The success parameter of this research can be seen by knowing the commutation of BLDC motor controlled by three-phase inverter through Arduino Uno microcontroller to control the speed of BLDC motor with certain frequency.

Keywords: *Brushless Direct Current (BLDC), three-phase motor driver, three-phase inverter, Arduino Uno, mosfet IRF3205*