

**PERANCANGAN SISTEM KONTROL MOTOR BLDC 1000
WATT MENGGUNAKAN SIX-STEP COMUTATION
BERBASIS ARDUINO UNO R3 PADA SEPEDA MOTOR
LISTRIK OTOTECH MT-17** (*Design Of 1000 Watt Bldc Motorcycle
Control System Using Six-Step Comutation Based On Arduino Uno R3 On
Ototech Mt-17 Electric Motorcycle*)

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ABSTRACT

An electric motorcycle is a bicycle that is driven by an electric motor of the Brushless DC (BLDC) type, which uses a motor driver to control an electric motor, and uses electrical energy stored in a battery. BLDC motor is a 3-phase AC synchronous electric motor that has a trapezoidal back-emf. The back-emf zero crossing circuit is a simple circuit located outside the motor by arranging resistor components as voltage dividers. In the controller device, a microcontroller plays a role in regulating the switching process in the mosfet driver circuit controlled by Arduino Uno R3 based on Atmega 328. In this study the method used was experimental, namely comparing the input value with the output value with several variations of the test. The data obtained from the research results show that the value of the duty cycle will determine the speed at which the wheels are connected to the BLDC motor. At a load of 50 kg and 100 kg the output voltage that flows has increased from the no-load output voltage. The difference in output voltage is 50 kg with no load of 2 volts AC. While the difference in output voltage is 100 kg with no load of 8 volts AC.

Keyword : BLDC, Back-emf, Controller, Arduino Uno R3