

**Rancang Bangun Motor Listrik BLDC 1000 Watt untuk
Sepeda Listrik OTOTECH MT-17**

by

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ABSTRACT

Brushless DC motor is a 3-phase AC synchronous electric motor that requires direct voltage to run. BLDC electric motors are considered more efficient than DC electric motors because they have higher performance, no voltage loss occurs, does not use a brush so that maintenance costs are lower. The working system of a BLDC motor is by utilizing the electromagnetic force of the copper coil on an iron core, between the iron core and the permanent magnet arranged in such a way that it produces continuous rotation of the rotor when the coil is energized by three-phase electric current. In the 350 watt BLDC electric motor, it is used as an initial specification which will be modified on the coil wire to increase the power of the BLDC motor to 1000 watts with the aim of maximizing the performance of the BLDC motor. In this study, the method used is experimental, namely comparing the input value with the output value with several variations of treatment. The results obtained if the diameter of the winding wire is increased, the resulting RPM value increases and the current increase is directly proportional to the RPM speed. While the torque has also increased, namely the 350 watt BLDC motor has a torque value of 61,2 Nm, for the 1000 watt BLDC motor there is a torque value of 126,4 Nm both are the same obtained at 50 RPM.

Keywords: DC brushless motor, Coil Wire, Power, Torque, RPM, Current.