KONVERSI SEPEDA MOTOR MATIC BEAT 2010 BENSIN MENJADI SEPEDA MOTOR LISTRIK 2 KW

Nama : **MICHAEL GULTOM**

NIM : **2103201151**

Dosen Pembimbing : **Abdul Gafur, S.Si., M.T.**

ABSTRAK

Perencanaan konversi sepeda motor bakar menjadi sepeda motor listrik, peneliti akan berpedoman pada Peraturan Menteri Perhubungan Republik Indonesia Nomor PM 65 Tahun 2020 Tentang Konversi Sepeda Motor. Tujuan konversi sepeda motor listrik untuk mengetahui performa sepeda motor setelah melakukan perubahan sistem penggerak. Metode yang dilakukan mengganti sistem tenaga menggunakan motor listrik dan baterai sebagai sumber energi. Hasil konversi sepeda motor listrik mengunakan motor penggerak *bldc* tipe. Dinamo *BLDC* 2 KW/72V, *Brushless Controller* (2-mode) *voltage* 48/72V, *trotlle* gas electrik 72V, Baterai lifepo4 dengan tegangan 72V/25Ah, memakai charger khusus lifepo4 72V 24s, memakai charger khusus lifepo4 72V 24s, memakai charger khusus lifepo4 72V 24s, sepeda motor listrik yang dikonversi jenis beat 2010 bensin. Hasil pengujian konversi sepeda motor listrik, dengan melakukan pengujian tampa beban dengan kecepatan maksimum 20 km/jam, tegangan *ouput* 61,3 V, arus *output* 5,23 A daya *output*, 321,56 P. Pengujian beban variasi dengan kecepatan maksimum 20 km/jam berat 50 kg, tegangan *ouput* 42,63 V, Arus *output* 6,03 A, daya *output* 257,50 P, beban 70 tegangan *ouput* 38,76 V, arus *ouput* 6 A, daya ouput 232,19 P, beban 95 kg tegangan *output* 27,9 V, arus *output* 11, 96 A, daya *output* 335,74 P. Pengujian ketahanan baterai dengan menggunakan alat ukur *Battery capacity voltage.* Setelah menguji pemakaian baterai dengan awalnya 100% Volt penuh, dibawah berjalan sejauh 5,8 kilometer, kapasitas baterai bekurang 88% Volt. Jika pengurangan baterai 12% Volt dalam sekali putaran, maka dalam sembilan kali putaran sejauh 26,1 kilometer baterai sepeda motor listrik habis.

Kata kunci: Motor bldc, beat 2010, *Brushless Controller,* baterai lifepo4

ONVERSION OF BEAT 2010 GASOLINE MATIC MOTORCYCLE INTO 2 KW ELECTRIC MOTORCYCLE

Name	***:*** **MICHAEL GULTOM**
Register Number	***:*** **2103201151**
Advisor	***:*** **Abdul Gafur, S.Si.,M.T.**

ABSTRACT

Planning to convert a combustion motorbike into an electric motorbike, researchers will be guided by the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 65 of 2020 Concerning Motorcycle Conversion. The purpose of converting electric motorbikes is to find out the performance of motorbikes after making changes to the drive system. The method used is to replace the power system using an electric motor and battery as an energy source. The results of the conversion of electric motorbikes use a bldc drive motor type Dinamo BLDC 2 KW/72V, Brushless Controller (2-mode) 48/72V voltage, 72V electric gas trotlle, Lifepo4 battery with 72V/25Ah voltage, Uses a special charger lifepo4 72V 24s, Uses special charger for lifepo4 72V 24s, using a special charger for lifepo4 72V 24s, an electric motorbike that converts to the 2010 beat type of gasoline. The results of the electric motorbike conversion test, by carrying out tests without a load with a maximum speed of 20 km/h, output voltage of 61.3 V, output current of 5.23 A, output power, 321.56 P. Testing of load variations with a maximum speed of 20 km/h hours weight 50 kg, output voltage 42.63 V, output current 6.03 A, output power 257.50 P, load 70 output voltage 38.76 V, output current 6 A, output power 232.19 P, load 95 kg output voltage is 27.9 V, output current is 11.96 A, output power is 335.74 P. Testing battery resistance using a battery capacity voltage meter. Battery less 88%. If the battery reduction is 12% in one round, then in nine rounds as far as 26.1 kilometers the electric motorcycle battery runs out.

Keywords: BLDC motor, beat 2010, *Brushless Controller*, lifepo4 *battery.*