

**DEVELOPMENT AND ANALYSIS OF BRUSHLESS DIRECT CURRENT
(BLDC) MOTOR TEST UNIT USING VEDDER ELECTRONIC SPEED
CONTROLLER (VESC)**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

DEVELOPMENT AND ANALYSIS OF BRUSHLESS DIRECT CURRENT (BLDC) MOTOR TEST UNIT USING VEDDER ELECTRONIC SPEED CONTROLLER (VESC)

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The Brushless DC (BLDC) motor is the ideal choice for applications that require high reliability, high efficiency, and high power-to-volume ratio. BLDC motors are a derivative of the brushed DC motor, the most used DC motor in the market, and both of the motors share the same torque and speed performance curve characteristics. The noticeable difference between the two is the use of brushes. BLDC motors do not have brushes and the commutation must be performed electronically. On the other hand, Electronic Speed Controller or known as ESC, an electronic circuit which are used to control electric motor speed, are widely popular. ESCs are mostly used on radio controlled models such as quadcopter, drone, RC airplanes, etc. Benjamin Vedder invented his own ESC, which is called Vedder Electronic Speed Controller or VESC for short. Unlike ordinary ESC, this open source VESC has more complex features and is able to generate data from the BLDC motor. Thus, this is the reason why it was decided to use VESC to display the data of BLDC motor and develop the test unit for educational purposes in Swiss German University.

Keywords: BLDC Motor, ESC, VESC, Motor Control, Test Unit.



DEDICATION

I dedicate this works for the future of Swiss German University and my beloved country Indonesia.



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