

STUDY OF BIODIESEL PERFORMANCE

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2013

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LP 26 FMSM | 2013



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STUDY OF PERFORMANCE BIODIESEL

By

MUHAMMAD FAUZAN BIN MAT YUSOFF

**A thesis submitted in partial fulfillment of
the requirement for the award of degree of
Bachelor of Applied Science (Maritime Technology)**

**DEPARTMENT OF MARITIME TECHNOLOGY
FACULTY OF MARITIME STUDIES AND MARINE SCIENCES
UNIVERSITI MALAYSIA TERENGGANU**

2013

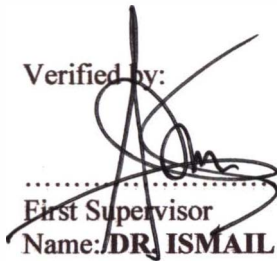


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**DECLARATION AND VERIFICATION REPORT
FINAL YEARS RESEARCH PROJECT**

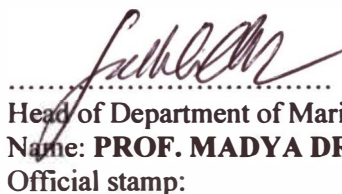
It is hereby declared and verified that, this research report entitled:
STUDY OF PERFORMANCE BIODIESEL by **MUHAMMAD FAUZAN BIN MAT YUSOFF**, Matric No. **UK 21678** has been examined and all errors identified have been corrected. This report is submitted to the Department of Maritime Technology as partial fulfillment towards obtaining the **BACHELOR OF APPLIED SCIENCE (MARITIME TECHNOLOGY)**, Faculty of Maritime Study and Marine Science, University Malaysia Terengganu.

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DECLARATION

I hereby declare that this thesis entitled **STUDY OF PERFORMANCE BIODIESEL** is the result of my own research except as cited in the references.

Signature : 

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Date : 20 December 2012

ACKNOWLEDGEMENTS

Assalamualaikum W.B.T

I would like to express my gratitude to all those who gave me the possibility to complete this thesis. I want to thank the Laboratory of Samudra, University Malaysia Terengganu for giving me permission to commence this thesis in the first instance and to do the necessary experiment work.

I am deeply indebted to my supervisor Dr. Ismail bin Ibrahim whose help, stimulating suggestions and encouragement helped me to complete this research in time and writing of this thesis.

Especially, I would like to give my special thanks to my parents Mr. Mat Yusoff bin Loman and Mrs. Zaliha binti Ismail. At the same time not forgot to my wife Ramizah binti Mohammed whose patient love enabled me to complete this thesis.

Last, but certainly not least, I wish to express my sincere appreciation to the fellow member of S.M.S.G (Technology Maritime) who help me in able to finish my research

Thank you

ABSTRACT

Nowadays, the production of fossil fuel is beginning to deplete. This is horrible due to the fact that maritime industry is fully dependent to it. Although fossil fuel is very much needed in maritime and other industry as a power source, it also gives negative impacts towards environment. The emission of burning fossil fuel has affected our air and water quality for many years. Therefore, this encouraged us to discover deeper on an alternative energy source which is Biodiesel. Nowadays, technology has developed and ready to be tested to its full potential. The birth of Biodiesel as fuel produced from a mixture of diesel and biodiesel through a “blended” which will be used to replace diesel fuel in diesel engines. This research is offering a source of knowledge on the study of biodiesel performance. The idea is to plant using palm oil carcass and then mixture with solution X and after fermentation for 7 days. For the testing idea it measure to focus about Torque, Power, vibration and noise using diesel engine test bed (Yanmar TF120M), vibration meter and digital sound level meter. Thus, this research will measure rate the price of biodiesel BD20 for one (1) liter on the market.

ABSTRAK

Pada masa kini, pengeluaran bahan api semakin berkurangan. Keadaan ini akan memberi kesan yang besar kepada industri maritim. Walau bagaimanapun bahan api adalah sangat penting dalam maritim dan industri-industri lain sebagai sumber tenaga. Ia juga memberikan kesan negatif kepada persekitaran. Pelepasan bahan api fosil akan memberi kesan kepada kualiti udara dan air dalam jangka masa panjang. Bagaimanapun, teknologi yang dihasilkan telah sedia untuk menguji keberkesanan. Penghasilan biodiesel sebagai bahan api dari campuran diesel dan biodiesel melalui “kisaran” dimana ia akan digunakan untuk menggantikan bahan api diesel didalam engine diesel. Penyelidikan ini mengenai pengetahuan tentang prestasi biodiesel. Kajian ini dibuat dengan menggunakan pelepah kelapa sawit kemudian dicampurkan dengan sumber X selepas itu di perap selama tujuh (7) hari. Fokus ujian ini adalah untuk menentukan kecekapan, kuasa, getaran dan bunyi dengan menggunakan ujian engine diesel tidur (Yanmar TF120M), meter getaran, dan meter tahap bunyi digital. Kemudian, kajian ini akan menentukan kadar harga pasaran biodiesel BD20.