STUDY OF PROPERTIES OF COMPONENTS FOR OFFSHORE AQUACULTURE TECHNOLOGY FARMING

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Study of properties of components for offshore aquaculture technology farming / Azri Akif Ab Aziz.

STUDY OF PROPERTIES OF COMPONENTS FOR OFFSHORE AQUACULTURE TECHNOLOGY FARMING

By

Azri Akif bin Ab Aziz

A thesis submitted in partial fulfillment of

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DEPARMENT OF MARITIME TECHNOLOGY

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It is hereby declared and verified that this research entitled: **Study of Properties of Components for Offshore Aquaculture Technology Farming** by **Azri Akif bin Ab Aziz** Matric No. **UK 17444** 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 Degree of Applied Science (Maritime Technology)**, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare this thesis entitled **Study of Properties of Components for Offshore Aquaculture Technology Farming** is the result of my own research except as cited in the references.

Signature :
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A STUDY OF PROPERTIES OF COMPONENTS FOR OFFSHORE AQUACULTURE TECHNOLOGY FARMING

ABSTRACT

This study outlines analysis about selection of suitable material for offshore technology farming in general, especially in seaweed farming. This has occurred because in most cases, floating structures proved to have economical and dependable, operational advantages and it emerge to be more acceptable from an environmental point of view. Generally, floating structure is used for the construction of various facilities and accommodations. Study of properties of components for offshore aquaculture technology farming involved the properties of material selection that is suitable for floating offshore structure, and is conducted based on the case study area which is in Setiu, Terengganu. The materials are two types of rope; manila and polyester, and SHE-20 type of buoy. The result from the tensile test showed that manila rope has better usage for larger force and polyester rope can be use within smaller scale of force. The result from water absorption test showed that the buoy absorbed water with lower percentage, which means it can be used for longer period. This study is also involved other tasks; for example data gathering, experimental test, field works, and prototype modeling. The result of the study hopes to contribute to ocean farming, especially seaweed farming in the future.

KAJIAN SIFAT-KOMPONEN UNTUK LUAR PESISIR TEKNOLOGI PERTANIAN AKUAKULTUR

ABSTRAK

Kajian ini menggariskan analisis tentang pemilihan bahan yang sesuai untuk teknologi pertanian akuakultur pesisir luar secara umum, terutamanya dalam penternakan rumpai laut. Ini telah berlaku kerana dalam kebanyakan kes, struktur terapung terbukti mempunyai kelebihan operasi dan ekonomi dan boleh dipercayai, dan ia muncul untuk menjadi lebih diterima dari sudut pandangan alam sekitar. Secara umumnya, struktur terapung digunakan untuk pembinaan pelbagai kemudahan dan tempat penginapan. Kajian sifat-sifat komponen untuk teknologi pertanian akuakultur pesisir luar yang melibatkan pemilihan sifat-sifat bahan yang sesuai untuk struktur terapung pesisir luar, dan dijalankan berdasarkan kawasan kajian kes yang di Setiu, Terengganu. Bahan-bahan ini dua jenis tali; manila dan poliester, dan jenis boya SHE-20. Hasil daripada ujian tegangan menunjukkan bahawa tali manila mempunyai penggunaan yang lebih baik untuk daya yang lebih besar dan tali poliester boleh digunakan dalam skala yang lebih kecil kekerasan. Hasil daripada ujian penyerapan air menunjukkan bahawa boya menyerap air dengan peratusan yang lebih rendah, yang bermaksud ia boleh digunakan untuk tempoh yang lebih lama. Kajian ini juga melibatkan tugas-tugas lain; contohnya pemodelan pengumpulan data, uji kaji, kerja-kerja lapangan, dan prototaip. Hasil kajian ini berharap untuk menyumbang kepada pertanian lautan, pertanian terutamanya rumpai laut pada masa akan datang.