

CHARACTERISATION STUDY AND ANALYSIS OF  
PHOTOVOLTAIC-HYBRID FOR FISH FARMING

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

It is hereby declared and verified that this research report entitled: Characterisation Study and Analysis of Photovoltaic- hybrid for Fish Farming by Lim Guowei, Matric Number UK 20669, have 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 degree of Bachelor of Applied Science (Maritime Technology), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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## DECLARATION

I hereby declare that the content of this thesis entitled “Characterisation Study and Analysis of Photovoltaic- hybrid for Fish Farming” is the result of my own research, except as cited in the references.

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## **ABSTRACT**

Data-acquisition systems are widely used in renewable energy source (RES) applications in order to collect data regarding the installed system performance, for evaluation purposes. The aim of this study is to determine the output characteristics of the photovoltaic-hybrid (PV-battery) in order to achieve an accurate mathematical model to predict the amount of energy generated. This study introduced 3 different type of software which is Artificial Neural Network, Areslab and Eureka to simulate the output. In future, the network is able to estimate the maximum output power for field data and gives rise to the possibility that the proposed approach can be used for making decision regarding the installation of solar PV arrays in the field. These new systems will boost of high accuracy measurements.

## ABSTRAK

Sistem data pemerolehan digunakan secara meluas dalam aplikasi sumber tenaga yang boleh diperbaharui dalam usaha untuk mengumpul data mengenai sistem prestasi yang telah dipasang untuk tujuan penilaian. Tujuan kajian ini adalah untuk menentukan ciri-ciri output photovoltaic hibrid (batteri PV) dalam usaha untuk mencapai suatu model matematik yang tepat untuk meramalkan jumlah tenaga yang dijana. Kajian ini memperkenalkan tiga jenis perisian iaitu Artificial Neural Network, Areslab and Eureka untuk mensimulasikan output. Pada masa akan datang, rangkaian mampu menganggarkan kuasa output maksima untuk data lapangan dan menimbulkan kemungkinan bahawa pendekatan yang dicadangkan boleh digunakan untuk membuat keputusan mengenai pemasangan tatasusunan PV solar dalam bidang ini. Sistem baharu ini akan meningkatkan ukuran ketepatan yang tinggi.