DESIGN AND DEVELOPMENT OF THE STATIC BODY OF A SOLAR POWERED ELECTRIC SHUTTLE

By

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(MATRIC NUMBER: 14PCM00764)

AUGUST, 2016.

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HND Mechanical Engineering (Ibadan)

A THESIS SUBMITTED TO THE DEPARTMENT OF MECHANICAL ENGINEERING, COVENANT UNIVERSITY, OTA, OGUN STATE, NIGERIA

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF POST GRAUDATE DIPLOMA, IN THE DEPARTMENT OF MECHANICAL ENGINEERING, COLLEGE OF ENGINEERING, COVENANT UNIVERSITY, OTA.

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ACCEPTANCE

This is to attest that this thesis is accepted in partial fulfillment of the requirements for the award of Postgraduate Diploma in the Department of Mechanical Engineering, College of Engineering, Covenant University, Ota.

Philip John Ainwokhai **……**
Secretary, School of Postgraduate Studies Signature & Date

Professor Samuel Wara **. ……..**
Dean, School of Postgraduate Studies Signature & Date

DECLARATION

I, Ayinde, Oluseyi Kazeem (14PCM00764), declare that this research was carried out by me under the supervision of Prof. Festus A. Oyawale of the Department of Mechanical Engineering, University, Ota. I attest that the thesis has not been presented either wholly or partly for the award of any degree elsewhere. All sources of data and scholarly information used in this thesis are duly acknowledged.

Ayinde, Oluseyi kazeem ……..

Signature & date

CERTIFICATION

We certify that the thesis titled "Design and Development of a Solar Powered Electric Shuttle: Construction of the Static Body, is an original work carried out by AYINDE Oluseyi Kazeem (14PCM00764),, in the Department of Mechanical Engineering, College of Engineering, Covenant University, Ota, Ogun State, Nigeria, under the supervision of Prof. Festus A. Oyawale. We have examined and found the work acceptable for the award of a Post Graduate Diploma in Mechanical Engineering.

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Professor Samuel Wara, SPS ……..
Dean, School of Postgraduate studies Signature & Date

DEDICATION

This project is dedicated to Almighty God, the giver of wisdom, knowledge and understanding. I thank him for his divine protection over me and for guiding me through the successful completion of the Postgraduate Diploma programme in Mechanical Engineering, and also to my parents, families and friends for their support.

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Ayinde, Oluseyi Kazeem,

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ABSTRACT

In the interest for substitute method for power and the late climb in fuel value, man has put a great deal in research with the longing to restrain the utilization of fossil fuel. There has been extraordinary headway in sunlight based controlled electric vehicles and cross breeds. The real point of the venture was to create a vehicle fueled by a substitute wellspring of vitality. This first stage however is connected to the generation of the static body of the vehicle which would be controlled by an electric motor utilizing sun powered as its essential source. In development, mellow steel was utilized as the principle material in view of its mechanical properties. The parts, for example, frame, rack situate and so on were created and welded together by the procedure of oxyacetylene and electric circular segment welding keeping in mind the end goal to have a strong undercarriage and related parts. Other plan forms included weight thought, guiding amendment point, wheel arrangement, the slowing mechanism, ergonomics and general vehicle wellbeing thought. Arrangement was made for seats and battery compartments. The outcome got in the process demonstrated that the static body of the van was steady and when headed to a normal speed of 30km/h has expected powerful halting separation of 6.216m. The sun powered boards would be joined to the rack gave over the bus while the Photovoltaic batteries of 96V each future put in the compartment made at the back where it is associated with the electric engine and controllers for transmission. We presume that the static body of the grounds carry has been composed and created.