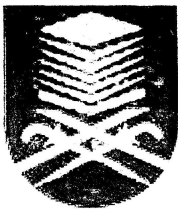


**BLADE DESIGN FOR STAND-ALONE ROOM LIGHTING
POWERED BY WIND ENERGY**

This project thesis is presented in partial fulfilment for the award of the
Bachelor in Electrical Engineering (Honours)

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ACKNOWLEDGEMENTS

First and all, in a humble way I wish to give all the Praise to Allah, the Almighty God, and the Benevolent for with His mercy has given me the strength, blessing and time to do research and completion of this project. A special acknowledgement goes to my supervisor, Prof. Ir. Dr. Shah Rizam Binti Mohd Shah Baki and co-supervisor, Pn Rahmatul Hidayah Binti Salimin for their patience and invaluable suggestion, guidance and advice for the completion of this project. I also wish to express special appreciation to all my family, to their kindness in giving me supporting to finish this project successfully.

Special thanks go to all staff and student from Faculty of Mechanical who helps me for the valuable research, information sharing and support all way I work to complete the project.

Lastly, not forget to my project partner; Muhammad Khudri Bin Halim Basha and Mat Nizam Bin Mahmud who has been involved directly and give support, commitment, and opinion in completing this research and project. Their contribution is really appreciated and grateful.

Thank you.

ABSTRACT

This project presents the blade design for the stand-alone room lighting power by wind energy. The blade design is very important because to collect the wind energy as maximum as possible. The blade design in this project is drag-based vertical axis wind turbine (VAWT). The system is creating because wind energy is one of renewable energy that the wind source is free and can get everywhere compare to other renewable energy. But other system that use energy source from sun is very expensive. So hopefully the new system of wind turbine is very practically to inventing because the component of the system is cheapest. The methodology used in this project is involved of simulation and hardware design. Simulation process conducted by CATIA, STAR DESIGN and STAR CCM software is used to simulate the blade design and determine the value of drag coefficient. Hardware design is proceed by choose the blade have higher force of drag. The experiment conducted to blade is tested in room and use DC generator to generate energy. The results collected is satisfying the objectives of project where it able to charge the rechargeable battery. For the future development, the blade must be design properly such as use airfoil VAWT and used more powerful permanent magnet generator.

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