

**PRELIMINARY DESIGN AND FABRICATION OF A STAND ALONE
SOLAR PHOTOVOLTAIC (PV) SYSTEM**

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ABSTRACT

People living in off-grid areas in Malaysia use a variety of different technologies for lighting. Most of them are still using kerosene lamp to light up their night. This thesis presents a Preliminary Design and Fabrication of a Stand Alone Solar Photovoltaic (PV) System .The aim of this project was to design and fabricate a Solar Powered LEDs Lantern. The purpose of this lantern is to reduce the consumption of kerosene for lighting purposes by replacing the kerosene lanterns and wick lamps by Solar Photovoltaic systems. The system is automatic in that it produces power when needed and charges the batteries from the sun during the day, for use at night. After all calculation to determine power consumption of LEDs and determine sizes of solar modules and battery, electrical circuit is developed following by design of casing and optimize lighting effect characteristic. Testing for desired lighting will be observed in dark room. To relate the analysis with relevant theory, a lux meter is used for measuring illuminances in work places. Overall about this thesis is an effort to enable billion lives to access light from solar technologies.

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