

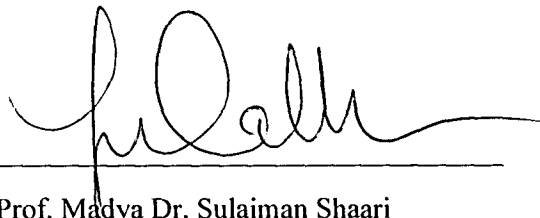
**DESIGN AND INSTALL STAND-ALONE PHOTOVOLTAIC
SYSTEM TO POWER UP A UNIT OF COMPACT
FLUORESCENT LIGHT USING 75 WP BP275F
MONOCRYSTALLINE SOLAR MODULE**

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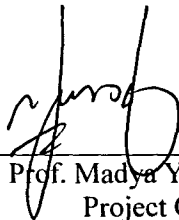
**Final Year Project Report Submitted in
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This Final Year Project Report entitled “**Design and Install Stand-Alone Photovoltaic System to Power Up A Unit of Compact Fluorescent Light using 75 Wp BP275F Monocrystalline Solar Module**” was submitted by Nurraihan Mohd Sharif, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Industrial Physics, in the Faculty of Applied Sciences, and was approved by



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ABSTRACT

A stand-alone Photovoltaic system is an independent Photovoltaic system which normally used in remote or isolated places where electric supply from the power-grid is not available at a reasonable cost. To install the stand-alone PV system, a system design is needed to get the appropriate sizing of the PV system components; PV module, battery, inverter, charge controller and load. In this project, a system design using Microsoft Office Excel is applied rather than calculate it manually because it involve too many formula and calculations. One unit of 36 W compact florescent light was used as the load. The PV system components were installed accordingly and the acceptance test have been performing twice; two cycle for charged and two cycle for discharged the battery. The parameters that have been measured during the experiment were irradiance, ambient temperature, PV module temperature, battery voltage, PV module voltage, battery current and PV module current. The system design is considered acceptable when the load successfully light up for 3 hours, exactly the same estimation from the system design. The load was disconnected at 3 hours of usage time at its Low Voltage Disconnect (LVD), 11.0 V. Lastly, the factors that affect the efficiency of PV module have been studied. It was found that the irradiance and temperature affect the efficiency of PV module where the efficiency decreased when the irradiance and temperature drop and vice versa. The instantaneous efficiency of PV module was found out to be 0.08 for first cycle and 0.09 for second cycle.

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