THE LED LIGHTING SYSTEM POWERED BY PHOTOVOLTAIC (PV)

This project report is presented in partial fulfillment for the award of the Bachelor of Electrical Engineering (Hons)

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ABSTRACT

In this era, most of the technology chases to use the renewable energy. Nowadays, fossil fuel which is a major power sources is become fewer from days to days. Besides, the fuel gives a major cause of environmental problems makes the mankind to look for alternative resources in power generation. One of the alternative resources is using solar energy. This project aims mainly to make a save and safe light system which is powered by the photovoltaic. The bulb will be made with the design using LED. LED helps to produced minimum output delivered because LED using a minimum energy. The source comes from the photovoltaic which will convert the solar energy to the electrical energy. This project also aims to design a charger controller to charge a battery. The charging circuit utilizes the three modes of the battery charging process; normal or bulk charge, finishing or float charge and equalizing charge.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Solar energy comes from the sun's heat and light. To use this energy there are a variety of technologies that have been develop such as concentrating solar power systems, passive solar heating and day lighting, photovoltaic systems, solar hot water, and solar process heat and space heating and cooling. Solar power can be used in both large-scale and small-scale applications. Photovoltaic is the direct conversion of light into electricity at the atomic level where some materials exhibit a property known as the photoelectric effect that causes them to absorb photons of light and release electrons. Using this source of energy there give many advantage such as improve efficiency and save money [1].

Therefore that is our opportunities as Asian countries that get good sunlight every day to also develop renewable energy such as solar energy [2]. As a domestic source of electricity, all house can use this energy for generate the power [3]. Some advantages of photovoltaic system are photovoltaic technology makes use of the abundant energy in the sun. It has little impact on our environment. Photovoltaic can be used in a wide range of products, from small consumer items to large commercial solar electric systems and very low maintenance. Photovoltaic system also has disadvantages like PV works during daytime with sunlight and high cost for installment [4]. PV has a free electron in it. When these free electrons are captured, an electric current will