

ABSTRACT

Indonesia is a country that have tropical climate and located near the equator. The indosesian climate is very suitable for the development of renewable energy such as solar energy power plant for electricity generator. Generating electricity using solar energy power plant is dependant on the placement of the solar panel otherwise it will not be optimal, because the photovoltaic is dependent with the intensity of the sunlight that can change at anytime wich will cause the amaount of power generated. So in order to maximize the amaount of power generated it need a controler that can manipulate the angle of the solar panel.

With the used of moving mechanism and photovoltaic controller that can be controled through application we hope to achieve optimal result. The controlling system used ESP8266 module as the microcontroller and as a link from android based application to its mechanics as a driver for photovoltaic The photovoltaic mechanism is designed to be placed freely (portable). For the actuator servo motor is used to move the plant, the servo motor should be able to move a load of 23 kg and is conected using bicyle gear.

In this final project the photovoltaic can follow the sunlight intensity and can generate much more power. The photovoltaic hardware has error value of $\pm 20\%$.

Keyword: *Renewable Energy, Drive Mechanism, Photovoltaic, Android, Control.*