ABSTRACT

Utilization of solar energy as an alternative energy is the right choice in condition of the crisis of energy sources at this time. Photovoltaic cells or for the magnitude of the scale are often referred to the solar panel is a tool that can transform the energy of photons from the sun into electrical energy. But in reality, the utilization of photovoltaic cell in generating electrical energy is far from optimally. The angel of tilt of the solar cell panels is very influence to little or great absorption energy of photons from the sun.

The solar cell will obtain maximum energy, when the angel of the solar panel perpendicular to the direction of the sun. Therefore, it needs a controller system that aims to keep the angel to maximize the absorption of photons energy per day. The system will be designed using the Atmega 2560 microcontroller as the center of the controller, in this system used light sensor as the sun's cathers the name is LDR sensor (Light Dependent Resistor), then to the movers use two servo motor mounted horizontally and vertically.

Designed system get a comparison of the efficiency of the first day of the auto panel is equal to 15.5% compared with the passive panel efficiency is only 13.3% which is the result of a comparison of the average power compared with the first day and the light input surface area of the panel, so it can be said that the panel with automated systems to work more optimal than the passive panel.

***Keyword** : Energy, Photovoltaic cell, Solar Panel, Atmega 2560, LDR, Servo motor*