

ABSTRACT

The sun is one example of various renewable energy sources as an alternative to overcoming the energy crisis. Solar radiation energy can be converted into electrical energy by using solar panel instruments. Many studies regarding the improvement of work functions/efficiency of solar panels, but in terms of measurement parameters still use conventional measuring devices for reading the value of these parameters.

In this research a solar panel parameter monitoring tool has been built which is designed in the form of a compact kit for the user, in this system has a sub voltage measurement system with an accuracy of DC voltage sensor of $\pm 0,518\%$; electric current measurement with INA219 sensor accuracy of $\pm 2\%$; panel temperature measurement with LM35 DZ sensor accuracy of $\pm 3,721\%$; measurement of light intensity with GY-49 sensor accuracy of $\pm 0,913\%$; and the logger sub-system as a feature for data acquisition. This tool was tested using a 20 WP polycrystalline solar panel that has been set at an angle of installation at any time and obtained average efficiency on solar panels by 8%.

Keywords : *Monitoring Tools, Solar Panels, Sensors, Logger Systems.*