

## ABSTRACT

*Monitoring the performance of solar panels needs to be done to assess the performance of a solar panel. This study aims to monitor directly and real time for current, voltage, temperature, power, and light intensity.*

*To meet these needs, the solar panel monitoring system that is designed is equipped with a calibrated current, voltage, temperature and light sensor. Data transmission system using the internet that is integrated into web applications and databases as data storage. Designing a microcontroller-based system that is connected to a computer or smartphone.*

*In this study, using a 100Wp solar panel and using a 30 ° angle facing north. Sensor monitoring is connected by cloud that is connected with thingspeak.*

*Testing is carried out for 3 days. During testing the largest input power is on the third day at 80.64 watts and the highest output power at 64.14 watts on the second day. Temperature and light intensity affect the size of the voltage produced by solar panels. The strengths of this research are the existing research, which is equipped with applications that can make it easy to monitor solar panels regularly.*

**Keywords:** *monitoring, photovoltaic, Internet of Things*