

## **ABSTRACT**

*Solar energy can be easily converted into electrical energy by using solar panels. However, most solar panels are still installed static and do not follow the movement of the sun so that the power generated is less optimal. Therefore, a system is created that can follow the movement of the sun so that the output power generated is more optimal.*

*In this study a dual axis passive solar tracking system was designed to follow the movement of the sun using four mini solar panels. This mini solar panel is placed on each side of the main panel as a light sensor and voltage source that drives the DC motor. The output power of the solar panels is monitored using the Arduino and displayed on the LCD and stored in an SD card.*

*The test was conducted over nine days by comparing the output power of solar panels with passive solar trackers and static solar panels. Static solar panels were positioned at a 35° west-facing tilt angle in the first test, a 0° tilt angle against the horizon on the second test, and a 35° tilt angle facing east on the third test. The results of this study obtained an average increase in power output for three days in each test by 57.59% in the first test, 16.45% in the second test, and 42% in the third test.*

*Keywords: Renewable Energy, Solar Tracker, Solar Panels*