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Planning and Manufacturing of Four Axis Solar Panels With Reflector Angle Adjustments

Perencanaan dan Pembuatan Panel Surya Four Axist Dengan Pengaturan Sudut Reflektor

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Solar thermal energy is one type of renewable energy, so this type of energy can be converted into other energy. This study uses a four-axis solar tracker with angle settings on the reflector to get optimal sunlight, scanning to determine the optimal lighting angle, measurement results are stored in real-time in the data logger. This study uses an LDR (Light Dependent Resistor) as a sunlight detector, equipped with several sensors, namely: current, voltage and power sensor (INA219), light sensor (MAX4409), and temperature sensor (DS18B20), and reflector angle as a parameter of solar efficiency panels. . The results showed that a four-axis solar tracker equipped with a reflector was able to increase the output power. The maximum power production produced by solar panels is: At a reflector angle of 300, the maximum power generated by a static panel is 143.43 W while a solar tracker is 175.15 W. At a reflector angle of 450 the maximum power generated by a static panel is 170.01 W and solar tracker 236.36 W. At an angled reflector of 600 the full power generated by a static panel is 87.77 W, and a solar tracker is 123.36 W. This study concludes that a solar tracker panel with an angle setting of 300 is more capable of maximizing power output than a static solar panel.

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