

**OPTIMASI KONSUMSI ENERGI DALAM BUDIDAYA BUAH NAGA
MENGUNAKAN TEKNOLOGI *PHOTOVOLTAICS* BERDASARKAN
METODE MPPT (*MAXIMUM POWER POINT TRACKING*) BERBASIS
*WEBSITE MONITORING***

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ABSTRACT

In dragon fruit cultivation, one of the main problems faced is the high consumption of electricity from PLN for lighting, which has an impact on increasing operational costs. To overcome this, this research develops a solar panel-based energy monitoring system with the Maximum Power Point Tracking (MPPT) method to optimize energy utilization and reduce dependence on PLN electricity. The purpose of this research is to design and implement a lighting automation system and pesticide watering using solar panels, and analyze the efficiency of the energy produced. The results of this test show that the initial installation cost of the solar panel system is indeed higher than the installation of PLN electricity. However, in terms of monthly operating costs, solar panels are much more economical. This makes solar panels a more efficient long-term investment.

Keywords : Solar Panel, MPPT, Energy Efficiency, Website Monitoring, Dragon Fruit Cultivation, Smart Farming, Renewable Energy, IoT.