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Desain dan Implementasi Maximum Power Solar Tracker Menggunakan Panel Photovoltaic di Kota Semarang

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Abstract

The purpose of this research is to design and implementation Maximum Solar Power Tracking system using photovoltaic panel, in order to increase solar panel efficiency and power. Data collection is done for the condition in Semarang city. The result of the research is expected to be base in planning of solar power system in Semarang city, whether it is for lighting lamp planning and for Solar Home System (SHS). This MPPT system design uses standard 180 degree servo motor to drive photovoltaic panel and control circuit using ATmega IC, while simulation using MATLAB program. Tracking is done by online tracking method by moving the photovoltaic panel to the radiation of the sun. Tracking simulation is done with step 20, 50 and 180 step. The average of voltage generated by system without tracking is 3.97 Volt while the average voltage generated by tracking system is 4.72 Volt. Efficiency between system without tracking and tracking system is 66.28% for tracking system and 78.78% for tracking system

Keywords

MPPT,Solar Photovoltaic, Tracking

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