

New control technology for solar power generation

A combination of AI, smart materials, adaptive solar cells, and blockchain power distribution provides a new solution towards weather-independent and autonomous solar power ...

This study presents a novel approach for integrating solar PV systems with high input performance through adaptive neuro-fuzzy inference systems (ANFIS). A fuzzy neural inference ...

Taking the island detection of photovoltaic grid connected inverters based on Adaboost algorithm as an example, the feasibility of the technology was verified through experiments.

To increase the efficiency of solar panels, a solar tracking strategy is used by automatically adjusting the angle of the panels throughout the day to directly face the sun, and ...

This paper proposes a novel hybrid control strategy that combines PSO-tuned PID controllers with Fuzzy Logic Controllers to enhance power flow management and control in ...

In this paper, a novel sensor-free closed-loop solar tracking control strategy is proposed to overcome the dependency on external sensors in conventional closed-loop systems.

As solar power accelerates worldwide, engineers are rethinking how photovoltaic systems interact with the grid. A recent paper co-authored by EIT's Dr Hossein Tafti explores a ...

Grid-connected PV inverters (GCPI) are key components that enable photovoltaic (PV) power generation to interface with the grid. Their control performance directly influences system ...

There is a pressing need to synchronise efforts to address energy poverty and reduce carbon emissions. This initiative aims to promote the adoption of decentralised power generation systems in order to ...

In this paper, we explore the impact of AI technology on PV power generation systems and its applications from a global perspective. Central to the discussion are the pivotal applications of AI in ...



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