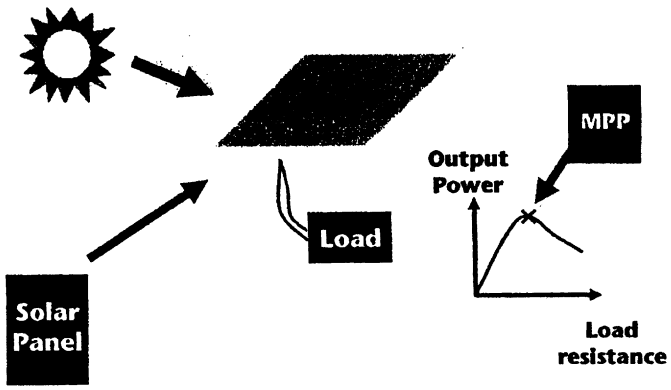
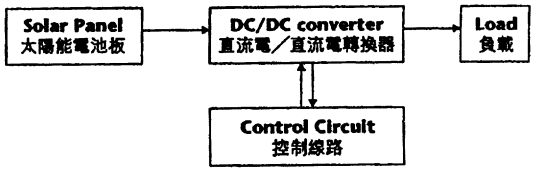
香港城市大學
City University of Hong Kong

A Novel Maximum Power Point Tracker for the PV panels
太陽能電池板最大輸出功率追蹤器

Supervisor:
Dr Henry S H Chung

Student:
Mr Ho Ming Tai (何銘泰)





Descriptions:

This research aims to develop a maximum power point tracker for the solar panels. Its working principle is based on connecting a dc/dc converter between the solar panel and the output load. The input condition (resistance) of the dc/dc converter is controlled by monitoring the output voltage of the solar panel in such a way that it matches the optimum load condition of the solar panel. When the optimum load condition is obtained, maximum power point is tracked. The solar panel, therefore, will give maximum output power.

Advantages:

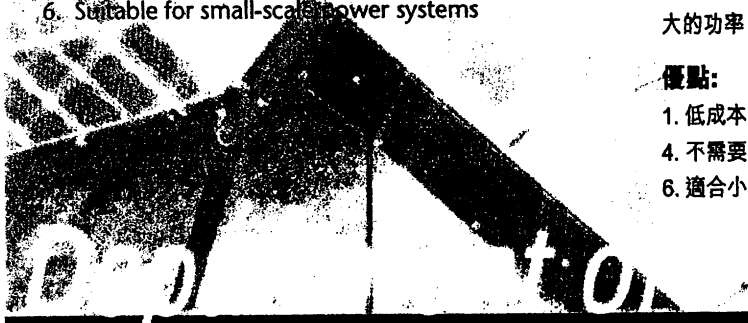
1. Low cost
2. High accuracy
3. Simple circuitry
4. No microprocessor required
5. Can adapt to rapid irradiance change
6. Suitable for small-scale power systems

簡介:

這項研究的目的是發展一個太陽能電池板最大輸出功率的追蹤器。它的工作原理是在太陽能電池板的輸出點和負載之間，加入一個直流電／直流電轉換器。追蹤器的控制線路會透過監視太陽能電池板的輸出電壓，而調整轉換器的輸入情況（輸入電阻）。當轉換器的輸入電阻正好可以配合到太陽能電池板的最佳輸出情況的時候，太陽能電池板便會輸出最大的功率。

優點:

1. 低成本　2. 效能高　3. 線路簡單
4. 不需要微處理機的幫助　5. 可以適應快速的天氣（光度）轉變
6. 適合小型的電力系統



Electronic Engineering