URN etd-0407109-183704-243
Author Yi-Hua Chang
Author's Email Address No Public.
Statistics This thesis had been viewed 51 times. Download 0 times.
Department
Year 2003
Semester 2
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Analysis and Design of a Single-Phase Three-Wire Photovoltaic Energy Conversion System
Date of Defense 0000-00-00
Page Count 96
Keyword
active power filter
differential-mode system
common-mode systems
stand-alone

Abstract
This thesis presents a single-phase three-wire photovoltaic(PV) energy conversion system. When the proposed system is operating at the maximum power point, the energy is fed to the utility with sinusoidal wave. In low insolation environment, the proposed system operates at the function of active power filter and battery charger. When the utility is fault, the system is disconnected from the utility source. Instead of using a full-bridge inverter with a centric-tapped transformer, this thesis proposed a three-leg converter to yield single-phase three-wire circuit, thus resulting in a smaller physical volume and lower weight. Moreover, this system can feed energy to residential load continuously, even when the utility is interrupted. So this system include the function of the off-line uninterruptible power supply(UPS) type performance. The proposed control system is decoupled into differential-mode and common-mode subsystems. Finally, a 1kVA experimental prototype was built to demonstrate the performance of the proposed techniques.
Advisory Committee Ming-Tsun Tsai - advisor

Files No Any Full Text File.
Date of Submission 2004-07-14