

Abstract

Mostafa Ahmed Abdel Galil

Control of Photovoltaic Grid Connected using Different Control Strategies

A control method for two-stage utility grid-connected photovoltaic power conditioning systems (PCS) is proposed. This approach enables maximum power point tracking (MPPT) control with post-stage inverter current information instead of calculating solar array power although no information is needed on PV array, which significantly simplifies the controller and the sensing part. In addition fuzzy logic control (FLC) method is presented and show difference between this method and other methods to control the PV power. In addition a combination of FLC with PCS is tested. MPPT using FLC has advantages of better performance, robust and simple design. In addition, this technique does not require the knowledge of the exact model of system and it can handle the nonlinearity. Modelling, controller design, simulation study of a grid connected PV system, and the overall configuration of the grid connected PV system is present.