

عنوان مقاله:

Absorbency of Power Control Flexibilities for Single-Phase Grid-Connected Photovoltaic Systems

محل انتشار:

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خلاصه مقاله:

The photovoltaic systems include components such as solar panels, DC-DC converter, DC link capacitor, DC-AC converter and filters. Power electronic converters (DC-DC converter and DC-AC converter) are used in PV systems to improve the power quality. There are two main purposes for using power electronic devices: maximum power point in DC side and converting DC-AC power in AC side. Output power depends on different environmental conditions (irradiance and temperature). Hence, maximum power point tracking should be used for higher efficiency. Converters are important for the proper functioning of photovoltaic systems and can be used to enhance reliability and efficiency of photovoltaic systems. This paper provides a flexible control with possibility of reactive power injection without using a phase locked loop compared to the common control method by using a phase locked loop. Both of control methods designed by fixed voltage. The DC power of this system is provided through a photovoltaic array, then this voltage increases with a boost converter and goes to the DC Link capacitor then it enter to the inverter. Principles of operation flexibility flexible control method with the possibility of reactive power injection without using phase locked loop is based on the PQ theory for single phase systems. For this purpose, a second-order generalized integrator system have been used in this control method.

کلمات کلیدی:

PQ control, Photovoltaic System, Power Point Tracking

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