

عنوان مقاله:

Wind Turbine Driven Grid-Connected Inverter Based on Predictive Current Control Technique

محل انتشار:

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خلاصه مقاله:

Residential wind turbine driven grid connected inverters are modular distributed power generation devices that convert the AC power from the roof-top turbines to DC, and then to high quality AC power at the utility grid interface. In this paper the predictive current control method, which is normally suitable in low power schemes, is applied to modular grid connected inverter to improve the output current waveform with minimum THD. Many current-controlled PWM methods have been proposed to design high performance of current control for gridconnected inverters in distributed power generation systems. However none of them have good performance in providing low THD and, at the same time, good robustness to parameters mismatch. The proposed technique is superior to previously published schemes in achieving more precise current control with minimum distortion and harmonic noise, and at the same time, less sensitive to filter parameter mismatch. Experimental results demonstrate the superiority of the proposed method over existing methods. The experimental tests show that the inverter with the proposed predictive current controller has better robustness than the traditional predictive current controller. Available wind turbine-based grid connected inverters in the field show that the proposed method provides acceptable THD value based on IEEE standards

کلمات کلیدی:

Grid connected inverters, wind turbines, THD

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