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Control Scheme for Single-Stage Boost Inverter for Grid-Connected Photovoltaic

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Abstract : Increasing renewable sources such photovoltaic are the reason of environmental pollution. Because photovoltaic generates power in low voltage, first, generated power should increase. Usually, distributed generation injects their power to AC-Grid, hence after voltage increasing an inverter is needed to convert DC power to AC power. This results in utilization two series converter that grows cost, complexity, and low efficiency. In this paper a single stage inverter is utilized to boost and invert in one stage. Control of this scheme is easier, and its initial cost decreases comparing to conventional double stage inverters. A simple control scheme is used to control active power as well as minimum total harmonic distortion (THD) in injected current. Simulations in MATLAB demonstrate better outputs comparing with conventional approaches.

Keywords : maximum power point tracking, boost inverter, control strategy, three phase inverter
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