

عنوان مقاله:

An Improved Inverter for Renewable Energy Applications with Solid State Transformers

محل انتشار:

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خلاصه مقاله:

In this paper a 5-level inverter with high reliability, low THD and reduced cost for renewable energy applications is introduced. In medium power applications the power transformer size is the most important defect for a renewable energy system. In such a system the multilevel output frequency is low so power transformer became very large and by increasing frequency, transformer size can be declined. There are some methods for solving problems related to transformer size and solid state transformer is the best solution among them. This solution works by adding a circuit to the basic structure and because this circuit acts in a high frequency, as a result, the transformer size will be declined. Some companies recently started to produce single IGBTs with better thermal and power loss specifications and lower cost features. In this paper, we used these IGBTs instead of IGBT modules which are used in conventional medium and high power structures, so proposed circuit has lower cost in comparison with previous works

کلمات کلیدی:

Reliability; Renewable Energy; Solid State Transformer; Single IGBT and IGBT Modules; Thermal Performance

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