

Review on Novel Transformer Less Grid Connected Inverter using PV System

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Abstract: *The continuous urge for improvement in our standard of living has increased the consumption of electrical energy by leaps and bounds. This hike in energy consumption, draining of fossil fuels and degrading global environment has led to invention of green power generation systems. Thus, the global demand for renewable resources has led to flourishing of photovoltaic (PV) market. The enabling technology in the PV systems is the inverter, which could be either: 1) with transformer isolated or 2) without transformer non-isolated (transformer-less inverter). Recently, single phase transformerless voltage source inverters (VSI) have been extensively used for distributed photovoltaic grid tied systems. The objective of this paper is to review a few notable topologies and propose a new topology for transformer-less photovoltaic inverter. The analysis and design of the proposed topology is verified by simulating it on PSIM. Furthermore, the simulation results are validated by testing a proof-of-concept laboratory hardware prototype rated at 250 W.*
Keywords— Photovoltaic (PV) systems, transformer-less, single phase inverter.

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