

Review of Novel Multilevel Current-Source Inverters with H-Bridge and Common-Emitter Based Topologies

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Abstract	<p>This paper describes several approaches to create new configurations of multilevel current-source inverters from two kinds of basic main circuits, i.e., an H-bridge-based and a common-emitter-based topologies'. The first approach is an application of inductor cells connected in parallel with the main three-level current-source inverter. The inductor cells work to generate intermediate current levels for multilevel output waveform generation with no additional external power sources. The other approach is based on multiple superposition of non-isolated DC current-source modules onto the main three-level current-source inverter. Using these strategies, four of the new circuit topologies are obtained, which have simpler configurations and control algorithms. Several computer simulation and experimental results are presented in the paper to demonstrate proper operations of the proposed new topologies.</p>
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