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(57) Abstract :

For medium-voltage applications, a new symmetric switched diode multilevel inverter with decreased power switches is presented in this study. A number of double-source units make up the suggested topology, which generates a synthesised stepped output voltage waveform with a lower total harmonic distortion (THD). Comparing traditional and modern topologies reveals differences in the needed number of IGBTs, power diodes, and overall power losses. MATLAB/Simulink simulation software is used to simulate the seven-level output voltage, and hardware prototype models have been created to demonstrate the superiority of the suggested topology. The benefit of the suggested topology is then emphasised, and a topology for high-voltage applications is recommended.

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