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High-Frequency Half Bridge Inverter Applied to Induction Heating

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Abstract : This paper presents the analysis and design of a DC–AC resonant converter applied to induction heating. The proposed topology based on the series-parallel half-bridge resonant inverter is described. It can operate with Zero-Voltage Switching (ZVS). At the resonant frequency, the secondary current is amplified over the heating coil with small switching angle, which keeps the reactive power low and permits heating with small current through the resonant inductor and the transformer. The operation and control principle of the proposed high frequency inverter is described and verified through simulated and experimental results.

Keywords : induction heating, inverter, high frequency, resonant
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