

Article Abstract

Title:	Analysis and implementation of LLC-T series parallel resonant converter using fuzzy logic controller
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Abstract:	A modified LLC-T (inductor inductor capacitor) series parallel resonant converter (SPRC) has been simulated and the performance is analyzed. The limitations of two element resonant topologies have been removed by adding a third reactive element. The output voltage is regulated using fuzzy logic controller. The simulation study indicates the superiority of fuzzy control over the conventional control methods. The proposed approach is expected to provide better voltage regulation for dynamic load conditions. A prototype 300 W, 100 kHz converter is designed and built to experimentally demonstrate, dynamic and steady state performance for the LLC-T series parallel resonant converter. A comparative study is performed between experimental results and the simulation studies. The analysis shows that the output of converter is free from the ripples, and has constant current, regulated output voltage.
Keywords:	Resonant converter, fuzzy logic, control system, power electronics, MATLAB.