

### **36. A HIGH EFFICIENT ISOLATED RESONANT CONVERTER FOR PHOTOVOLTAIC APPLICATIONS USING FUZZY LOGIC**

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Among the Renewable Energy Sources (RES), the electrical supply from photovoltaic (PV) cells is currently regarded as a natural energy source than any other source because it is free, plentiful clean, and distributed over the earth. Within the PV systems, power converter is required to supply the PV power into the ac grid. This paper proposes a new type of hybrid series resonant and PWM boost converter utilizing a high-frequency bidirectional ac switch. This new converter achieves a wide input voltage range with simple fixed-frequency control. The proposed converter is able to combine voltage regulation through simple fixed-frequency PWM control along with the benefits of series resonant and LLC converters by simply adding a bidirectional ac switch across the secondary of the isolation transformer. The modes of the LLC converter operates in three modes, where the operation of switches in each modes are controlled by a fuzzy controller. The input to the fuzzy controller will be DC voltage and error voltage and the output to each switch will be the pulse generated from the fuzzy controller

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