

Can a single-stage inverter with variable frequency modulation based on LLC resonant converter?

This paper presents a single-stage inverter with variable frequency modulation (VFM) based on LLC resonant converter. And LLC converter is a common topology of dc/dc conversion. LLC resonant converter can achieve high efficiency and soft-switching performance.

How to achieve a single-stage inverter based on LLC converter?

It is proposed in this thesis that achieving a single-stage inverter based on LLC converter by using multi-resonant L-C branches. The work consists of the analysis of theoretical topology model, resonant tank design, simulation, implementation of hardware, and experimental verification.

Can LLC converter output a low voltage?

And it achieves zero-voltage-switching (ZVS). However, LLC converter can hardly output very low voltage due to the flat voltage gain curve at high frequency. Also, LLC converter only transfers the fundamental harmonic component to the load.

How resonant DC/DC converters can be used in a PV system?

The proposed structure, which utilizes the LLC resonant converter with standalone MPPT controller for each string, has also a modular structure. Hence, the PV system can be easily extended to higher number of the strings just by paralleling the outputs of the LLC resonant DC/DC converters.

Is a resonant LLC converter better than a PWM converter?

While a resonant LLC converter has several desired features such as high efficiency, low EMI and high power density, the design of a resonant converter is an involved task, and requires more effort for optimization compared to PWM converters. This document aims to simplify this task, and make it easier to optimally design the resonant tank.

What is resonant converter & unfolded inverter?

The proposed system employs the LLC resonant converter and unfolded inverter. The LLC resonant converter is used to regulate the sinusoidal output current of the grid connected inverter. Then the unfolded inverter which is operating at line frequency inverts this regulated current to the AC.

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Abstract: In this study, a direct medium voltage (MV) grid connected solar PV inverter topology is proposed based on LLC resonant converter and high frequency transformer (HFT). Rectified ...

Somani, Utsav, "Design Optimization Of Llc Topology And Phase Skipping Control Of Three Phase

Inverter For Pv Applications" (2013). Electronic Theses and Dissertations, 2004-2019. ...

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1) Stand-alone PV systems (off-grid), and 2) Grid-connected PV systems. In the stand-alone (off-grid) mode, the PV system is isolated from the main grid, and hence the PV-voltage is ...

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