Multi-port power conversion microgrid

The efficiency of converters was evaluated using accurate power measurement methods, where the input and output power were carefully tracked using precision power analyzer.

Economizing micro-grids through use of DC microgrids has become a major research focus. This paper proposes a novel converter topology that offers high-efficiency, reduced filter requirements and the ...

With the rapid advancement of hydrogen-based direct current microgrid (H2-DCMG) technology, multi-port converters (MPCs) have emerged as the pivotal interface for integrating ...

Abstract: In this paper, a new multiport DC-DC converter is proposed for DC microgrid applications. Besides, the proposed configuration has several benefits for the design and operation of DC ...

This paper proposed a multi-port converter that ensures high energy efficiency. Moreover, the proposed circuit driven by the predictive energy ...

Fig. 2 compares a conventional multiport power conversion architecture with multiple "dc-ac-dc" stages, against a multi-port architecture with a single "dc-ac-dc" stage between any arbitrary input-output ports.

This article presents a photovoltaic micro-grid system structure with multiport three-level converter (MP-TLC). In this structure, two AC power supplies/loads with different operating amplitudes and ...

The main advantages of the proposed topology are its high power density and the reduced number of switches with respect to the combination of different converters. Moreover, it ...

In this research, a hybrid energy-integrated multiport converter is designed and analyzed under its various modes of operation.

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