

Figure 1. Power electronic converters in microgrids. In an AC microgrid, power electronic converters are used to convert DC power (from PV cells, batteries, EVs, etc.) or variable frequency AC power (from wind turbines) ...

In this paper, a new multiport DC-DC converter is proposed for DC Microgrid applications. The bidirectional buck-boost structure of the proposed topology allows an enhanced flexibility to ...

The use of high-voltage gain DC-DC converters in DC-type microgrids simplifies the connection of low-voltage power sources like solar modules (which typically operate between 20 and 45 V). ... Shenai, K.; Shah, K. Smart DC micro-grid ...

High gain dc-dc converters are used in several applications which include solar photovoltaic system, switch-mode power supplies and fuel cells. In this paper, an ultra-high ...

This review emphasizes the role and performance of versatile DC-DC converters in AC/DC and Hybrid microgrid applications, especially when solar (photo voltaic) PV is the major source. Here, the various converter ...

DC microgrids are integral to smart grids, enhancing grid reliability, power quality, and energy efficiency while enabling individual grid independence. ... DC-DC converters in microgrid systems ...

1.1. Motivation. Amid the growing global energy crisis, microgrids are seen as a crucial strategy for tackling energy issues. This research study focuses on improving the smooth operation of ...

This paper proposes a learning-based finite control set model predictive control (FCS-MPC) to improve the performance of DC-DC buck converters interfaced with constant ...

In a DC microgrid system connected to photovoltaic distributed generation system, DC-DC converters play an important role to perform various functions. In this chapter, ...

DC Microgrid has a promising future due to its better compatibility with distributed renewable energy resources, higher efficiency and higher system reliability. This paper presents a ...

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