INVESTIGATION OF MULTIDECICE INTERLEAVED BOOST CONVERTER FOR RENEWABLE ENERGY SOURCE

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Abstract--- Recently a dc-dc converter is usually required in applications which have low output voltage such as Fuel cells, Batteries, photo voltaic cells. Multiphase converter topologies for use in high performance applications have received increasing interest in recent years. For designing high efficiency fuel cells which is a clean energy source and has a high energy storage capability, a suitable dc-dc converter is required. In this research, a multidevice structure with interleaved control is proposed to reduce the input current ripples, the output voltage ripples, and the size of passive components with high efficiency compared with the other topologies. In addition, low EMI and low stress in the switches are expected. One of the challenges in designing the boost converter for high power application is to how to handle the high current at the input side. The proposed dc/dc converter is compared to other converter topologies such as two-phase interleaved boost converter (IBC). Simulation studies has been carried out using MATLAB/SIMULINK.

Key words---MDIBC, MATLAB, ripple and interleaved.