



Prospective and Design of Thermo Electric Cooling Applications

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Thermo Electric Cooling for Outdoor Applications Using Photovoltaic Panels and Multistage DC Converter | This book presents the design of a transformer-less converter for low power applications based on CUK topology which is basically a combination of buck and boost topologies. This topology is principled on dividing the input voltage into storage devices as charging state then delivering the stored energy to the load at the discharging state. This process operated at high speed to ensure continuous conduction of load current. The converter converts input DC voltage throughout multistage voltage chopping. The transfer of energy through the capacitive elements ensures that the load current is almost ripple free. The power switches operated at high frequency and a PWM control IC was used to provide the operating signal for the switch. The simulation results show that the converter had the capability to supply the load of power up to 100W with an efficiency of 90% under ideal parameters and rated load supplied from PV. The results show that the converter could operate properly at high switching frequency up to 500KHz. Practical implementation of the converter shows that the converter operated at an efficiency...



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