عنوان مقاله:

A New Multilevel Inverter Based on Harvest of Unused Energies for Photovoltaic Applications

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خلاصه مقاله:

In multilevel inverters, unused energies are created due to the asynchronous use of the input DC sources. when the input DC sources are replaced by renewable systems such as photovoltaic arrays, some of the input energies remain unused. This paper presents a new multilevel inverter topology that can harvest the unused energies and return them to another output which leads to the harvest of the maximum input energy. The harvest of maximum energy (HME) based multilevel inverter structure consists of two terminals. One is connected to AC-load and another is joined to DC-load or rechargeable batteries. Another merit of the proposed multilevel inverter is that the number of its switches is comparable to other structures where unused energies cannot be harvested. Selective harmonic elimination (SHE) has been used as the switching strategy in the proposed multilevel structure. To verify the performance of the HME-based multilevel inverter topology, the experimental results for a type seven-level inverter were performed by the TMS۳۲۰F۲۸۳۷۹D DSP.

کلمات کلیدی:

multilevel inverter, Photovoltaic, Unused energies, Harvest of maximum energy, Selective harmonic elimination