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Portable Energy Storage Topologies

Overview

Battery electric vehicles (BEVs) are the most interesting option available for reducing CO2 emissions for individual mobility. To achieve better acceptance, BEVs require a high cruising range and good acc.

What is a D-Hest energy storage topology?

We suggest the topology class of discrete hybrid energy storage topologies (D-HESTs). Battery electric vehicles (BEVs) are the most interesting option available for reducing CO 2 emissions for individual mobility. To achieve better acceptance, BEVs require a high cruising range and good acceleration and recuperation.

What are the four topologies of energy storage systems?

The energy storage system comprises several of these ESMs, which can be arranged in the four topologies: pD-HEST, sD-HEST, spD-HEST, and psD-HEST. Detailed investigations will be undertaken in future work to examine special aspects of the proposed topology class.

What are the different types of hybrid energy storage topologies?

The topologies examined in the scientific literature to date can be divided into the passive hybrid energy storage topology (P-HEST), which is presented in Section 2, and the active hybrid energy storage topology (A-HEST), which is presented in Section 3.

What is a full-active hybrid energy storage topology?

Full-active hybrid energy storage topologies (FA-HESTs) comprise two or more different energy storage devices with each storage unit decoupled by power electronics , , , . This topology class is also called a fully decoupled configuration in the literature. The decoupling is usually done using bidirectional DC/DC converters.

Portable Energy Storage Topologies

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