Battery pack method

How to estimate state of charge of battery pack?
A dual-time-scale methodis employed to estimate State of Charge (SoC) of battery pack,reducing the computational load of the difference model.If the unique battery characteristics exceed system limits,a significant battery method is used to estimate SoC of pack battery.

How to design a battery pack?
The dimensions of battery packs also require a design to space evaluation. The occupied volume of the pack should be suitable for the related car chassis. As previously mentioned in Section 1, CTP and CTC are two different strategies for packaging design. These approaches differ from the modular one.

How important is the battery method in a power battery pack?
The important battery method can effectively protect the operation safetyof the power battery pack,but when the SoC works in the range of 30%-80%,this method will reduce the energy efficiency of the battery pack.

Do battery pack systems improve crashworthiness and lightweight design in electric vehicles?
The research focuses on optimizing battery pack systems (BPSs) for crashworthiness and lightweight design in electric vehicles. Traditional methods have high computing costs and do not account for the battery cell"s failure criterion. This study uses a submodel and hybrid weighting for multi-objective design.

This paper presents a novel adaptive cell recombination strategy for balancing lithium-ion battery packs, targeting electric vehicle ...

In recent years, various inconsistency evaluation methods have been proposed for battery packs, which can be summarized as follows: statistical-based methods, machine ...

The objective of this paper is to design an equalization circuit and control method capable of actively balancing lithium-ion battery packs, thereby preventing overcharge and ...

The proposed method highlights the modelling concepts that the terminal voltage of the pack-integrated virtual cell is determined by all cells inside the pack, which takes the ...

Abstract The research focuses on optimizing battery pack systems (BPSs) for crashworthiness and lightweight design in electric vehicles. Traditional methods have high ...

With the increase in battery pack scale and strict requirements for weight and volume, full deployment of sensors is costly and difficult to achieve, and sensor fault may lead ...

The simulation results show that the usable capacity using the proposed SoP-based method is improved by 16% as compared to the ...

In this paper, a MC2MC (Multi-Cell-to-Multi-Cell) battery pack active equalization scheme based on reconfigurable circuits and Buck-Boost converters is proposed and validated ...

This paper presents a simulation method for battery packs based on real cell cloning, demonstrating the effectiveness of using generative adversarial networks (GANs) to ...

This paper presents a novel adaptive cell recombination strategy for balancing lithium-ion battery packs, targeting electric vehicle (EV) applications. The proposed method ...

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