

Maintenance and management measures for energy storage charging piles

The simulation results of this paper show that: (1) Enough output power can ...

The wide deployment of charging pile energy storage systems is of great significance to the ...

This paper proposes a preventive maintenance decision model for electric vehicle charging stations based on mutation operators and lifecycle optimization to address the impact of potential faults on maintenance effectiveness. By introducing the particle swarm optimization algorithm with mutation operator, a comprehensive analysis of opportunity ...

In this paper, the battery energy storage technology is applied to the traditional EV (electric vehicle) charging piles to build a new EV charging pile with integrated charging, discharging, and storage; Multisim software is used to build an EV charging model in order to simulate the charge control guidance module. On this basis, combined with ...

Table 1 Charging-pile energy-storage system equipment parameters

Component name	Device parameters
Photovoltaic module (kW)	707.84
DC charging pile power (kW)	640
AC charging pile power (kW)	144
Lithium battery energy storage (kW·h)	6000
Energy conversion system PCS capacity (kW)	800

The system is connected to the user side through the inverter ...

With the application of the Internet of Things (IoT), smart charging piles, which are important facilities for new energy electric vehicles (NEVs), have become an important part of the smart grid.

New energy electric vehicles will become a rational choice to achieve clean energy alternatives in the transportation field, and the advantages of new energy electric vehicles rely on high energy storage density batteries and efficient and fast charging technology. This paper introduces a DC charging pile for new energy electric vehicles. The DC charging pile ...

The MHIHHO algorithm optimizes the charging pile's discharge power and discharge time, as well as the energy storage's charging and discharging rates and times, to maximize the charging pile's revenue and minimize the user's charging costs.

In this article, a real-time fault prediction method combining cost-sensitive logistic regression (CS-LR) and cost-sensitive support vector machine classification (CS-SVM) is proposed. CS-LR is...

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fault data of smart charging piles, then the CS-SVM is adopted to predict the faults based on the classified data.

In this paper, the battery energy storage technology is applied to the traditional EV (electric vehicle) charging piles to build a new EV charging pile with integrated charging,...

The construction of public-access electric vehicle charging piles is an important way for governments to promote electric vehicle adoption. The endogenous relationships among EVs, EV charging piles, and public attention are investigated via a panel vector autoregression model in this study to discover the current development rules and policy implications from the ...

In response to the issues arising from the disordered charging and discharging behavior of electric vehicle energy storage Charging piles, as well as the dynamic characteristics of electric vehicles, we have developed an ordered charging and discharging optimization scheduling strategy for energy storage Charging piles considering time-of-use electricity ...

Here is the translation of the differences, advantages and disadvantages, and application scenarios of AC charging piles, DC charging piles, and energy storage charging piles: AC Charging Piles. Features: AC charging piles convert AC power from the power grid to DC power through the onboard charging machine for charging.

By establishing a preventive maintenance decision model for electric vehicle charging piles, potential faults can be identified in a timely manner and appropriate maintenance measures can be taken, thereby improving the reliability and service quality of the charging piles.

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