Electric vehicle energy storage and clean energy storage patent analysis

A notable statistic from the EPO Patent Index is that for the second consecutive year, the greatest increase in patent filings was seen in the technology field of electrical ...

Through this project, Anovion will invest in large-scale battery materials manufacturing and strengthen the domestic lithium-ion battery supply chain critical to multiple industries - ...

This study explores the impact of energy storage innovation, clean fuel innovation, and energy-related R& D expenditures on sustainable development. The empirical ...

The electric vehicle (EV) technology addresses the issue of the reduction of carbon and greenhouse gas emissions. The concept of EVs focuses on the utilization of ...

While electric vehicles on the road today account for a mere 1% of total vehicles (and just below 3% of annual sales), under the SDS, charging batteries in electric vehicles will become the ...

Discover what our patent data analysis reveals about innovation in dual chemistry batteries, an important energy storage technology used in many sectors.

The report bears testimony to the challenge that electricity storage represents for energy transition. In view of rising demand for electric mobility and a growing dependence on the ...

This study explores the evolutionary features of the cooperative network and the ways in which network embedding influences innovation performance by analyzing 2808 patents pertaining to battery ...

Fuel cell electric vehicle (FCEV) is a disruptive technology compared to the incumbent internal combustion engine vehicle (ICEV) technology. Hydrogen is widely regarded ...

Electric-vehicle production was the most valuable sector overall, followed by clean-power production, rail transportation, electricity transmission and storage and energy ...

This study performs a statistical analysis of patent data for electric vehicle battery management systems (BMS) from 2000 to 2024, constructs a patent value evaluation system based on four ...

New energy battery electric vehicles have attracted a lot of attention in recent years, and in the context of the global implementation of sustainable developme

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To date, various energy storage technologies have been developed, including pumped storage hydropower, compressed air, flywheels, batteries, fuel cells, electrochemical ...

As for multi-source electric vehicles, compared with single-source electric vehicles, it can theoretically maximize the use of energy and increase the range of electric ...

Due to increasing concerns on climate change, air pollution, and associated public health, China"s new-energy-vehicle (NEV) industry has received great support and ...

Trump"s tariffs are about to drive up the cost of clean energy projects in the US, and energy storage is set to take the biggest hit, according to new analysis from Wood Mackenzie.

Among them, lithium energy storage has the characteristics of good cycle characteristics, fast response speed, and high comprehensive efficiency of the system, which ...

The energy storage section contains the batteries, super capacitors, fuel cells, hybrid storage, power, temperature, and heat management. Energy management systems ...

This paper leverages patent data to explore the developmental trends and research status of emerging energy storage technologies in China, including electrochemical, compressed air, ...

Abstract The ceiling of energy density of batteries in materials level motivates the innovation of cell, module and pack that constitute the battery assembly for electric vehicles ...

Based on the average electricity price, solar irradiance and the usage patterns of plug-in hybrid electric vehicle (PHEV), Guo et al. (2012) analyzed the energy storage ...

Currently, the world experiences a significant growth in the numbers of electric vehicles with large batteries. A fleet of electric vehicles is equivalent to an efficient storage ...

A fleet of electric vehicles is equivalent to an efficient storage capacity system to supplement the energy storage system of the electricity grid. Calculations based on the hourly demand-supply ...

Findings reveal energy storage"s dominance, with water energy storage and emerging hydrogen technology leading the trajectory. Global energy patent scrutiny ...

Finally, the energy technology of pure electric vehicles is summarized, and the problems faced in the development of energy technology of pure electric vehicles and their ...

The applications of energy storage systems have been reviewed in the last section of this paper including

general applications, energy utility applications, renewable ...

In this article, we develop a two-factor learning curve model to analyse the impact of innovation and deployment policies on the cost of energy storage technologies. We ...

Let"s face it, patents aren"t exactly known for their Hollywood glamour. But in the world of energy storage, they"re the backstage passes to the greatest energy revolution ...

The analysis is performed for eight countries with diverse socioeconomic and technological environments. Initially, the coherency in the orders of magnitude between ...

In order to advance electric transportation, it is important to identify the significant characteristics, pros and cons, new scientific developments, potential barriers, and imminent ...