

Research on energy storage industry patents at home and abroad

Which patents are related to the application of rechargeable batteries?

Rather related to the application of rechargeable batteries is the patent family encompassing "implantable device with improved battery recharging and powering configuration", showing that innovation in energy storage is also driven by medical technologies. The other cell patents are mostly related to inventions for improved electrodes. 3.3.

How many patents are there in the battery industry?

Research and development in the battery industry have led to a notable increase in patent filings at the United States Patent and Trademark Office (USPTO), climbing from 3,773 in 2010 to 5,319 in 2019 (see Figure 1). But as more players enter the market and obtain patent protection for their innovations, IP disputes among competitors are heating up.

Why is energy storage important?

Energy storage is an important technology and basic equipment for building a new type of power system. The healthy development of the energy storage industry ca

How has technology impacted the battery industry?

With these technical advances comes an increase in legal activity, including intellectual property (IP) filings and litigation. Research and development in the battery industry have led to a notable increase in patent filings at the United States Patent and Trademark Office (USPTO), climbing from 3,773 in 2010 to 5,319 in 2019 (see Figure 1).

Should battery and EV companies focus on patent strategy?

Battery and EV companies should focus on patent strategy beyond prosecution and enforcement. Companies should align their patent strategy with their overall business plan to ensure that a patent portfolio realizes its full economic potential and generates revenue for the company by protecting investments.

Are improved lithium modules still a viable technology?

Nevertheless, the volume of patent filings in technologies related to lithium remains unchallenged. Patent applications in this area are still growing, which indicates that the introduction of improved modules will continue. Using citation analysis, we have identified important patents and organizations for relevant candidate technologies.

In this paper, current development of energy storage (ES) in China and the United States is introduced firstly. Then, the typical ES policies of China and the United States are enumerated from the perspectives of general policies and multi-angle policies, which consists of the generation side, the grid side and the user side. Through the analysis of the policies, the ...

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In March 2019, Premier Li Keqiang clearly stated in Report on the Work of the Government that "We will work to speed up the growth of emerging industries and foster clusters of emerging industries like new-energy automobiles, and new materials" [11], putting it as one of the essential annual works of the government the 2020 Report on the Work of the ...

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We believe that energy storage is the key to the transition to a green future. As China's first energy storage industry association, we are proud to: Produce quality research on the projects, players, and policies shaping the industry. Promote business and government partnerships that strengthen the energy storage industry in China and abroad.

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Comparative Analysis on Energy Storage Policies at Home and Abroad and Its Enlightenment To cite this article: Yanwei Xiao et al 2019 IOP Conf. Ser.: Earth Environ. Sci. 267 032019 View the article online for updates and enhancements. Recent citations Research on promotion incentive policy and mechanism simulation model of energy storage technology

This paper systematically reviews the trend of carbon dioxide capture, utilization and storage (CCUS) industry in the world and China, presents the CCUS projects, clusters, technologies and strategies/policies, and analyzes the CCUS challenges and countermeasures in China based on the comparison of CCUS industrial development at home and abroad.

At home, the research of pure electric vehicle ... This replacement energy accounts for inefficiencies in the energy storage system conversion process. ... Research on automobile industry, no. 8 ...

Through the global and Chinese patent application volumes, the research comparatively analyzes the application situations of the main source countries and main ...

CNESA publishes an annual white paper detailing the latest trends in energy storage. Each report, prepared by the CNESA research team, provides exclusive data and insights to keep you informed about the energy storage industry in China and abroad. Here you can access a free PDF of our reports from 2011 to the present. PDF For download

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WANG Zhenyu, Deputy Director of the International Cooperation Bureau of the Chinese Academy of Sciences, said that the Chinese Academy of Sciences has a comprehensive layout in the field of energy storage ...

A recent trend in smaller-scale multi-energy systems is the utilization of microgrids and virtual power plants [5]. The advantages of this observed trend toward decentralized energy sources is the increased flexibility and reliability of the power network, leveraging an interdependent system of heterogeneous energy generators, such as hybrid renewable and ...

On November 7, the International Renewable Energy Agency (IRENA), a lead global intergovernmental agency for energy transformation, released the energy storage report entitled Key Enablers for the Energy ...

Through the research on the standardization of electric energy storage at home and abroad, combined with the development needs of the energy storage industry, this paper analyzes the ...

According to research findings, the number of published patents related to different TES technologies increase every year. China, the United ...

EPO's first joint study with the International Energy Agency underlines the key role that battery innovation is playing in the clean energy transition.

Explore the Data-driven Energy Storage Industry Outlook for 2024. The Energy Storage Industry Report 2024 uses data from the Discovery Platform and encapsulates the key metrics that underline the sector's dynamic growth ...

Aiming to bring a better understanding to the field of energy storage and observe the gaps that separate the emerging trends in academia and industry, the present article ...

Chapter 1 introduces the definition of energy storage and the development process of energy storage at home and abroad. It also analyzes the demand for energy storage in consideration of likely problems in the future development of power systems. Energy storage technology's role in various parts of the power system is also summarized in this ...

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The National Renewable Energy Laboratory (NREL) bridges research with real-world applications to advance energy technologies that lower costs, boost the economy, strengthen security, and ensure abundant energy. ...
46 Patents, ...

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Research on the Development Status of Electric Energy Storage at Home and Abroad from the Perspective of Standardization March 2023 DOI: 10.1109/ICGEA57077.2023.10126066

To develop transformative energy storage solutions, system-level needs must drive basic science and research. Learn more about our energy storage research projects. NREL's energy storage research is funded by the U.S. Department of ...

The National Energy Administration of China has listed hydrogen energy and fuel cell technology as a key task of energy technology and equipment during the 14th Five-Year Plan period, and released the White Paper 2020 on China's Hydrogen Energy and Fuel Cell Industry, which expounds the development trend, development prospect and key ...

2 Web of Science,2013--2022?? ...

Energy storage is an important technology and basic equipment for building a new type of power system. The healthy development of the energy storage industry cannot be separated from the support of standardization. With the adjustment of the national energy policy and the implementation of the energy conservation and environmental protection policy, the ...

Energy storage has become pivotal in ensuring efficient power grid operation and accelerating the transition to green energy sources, as China accelerates its green energy transition, said a top ...

However, they only made suggestions from the qualitative perspective. [19] [20][21] Hence, modelling research and simulation analysis on the promotion mechanism of energy storage technology are ...

Liu et al. [32] sorted out the current status of research on the economics of energy storage at home and abroad, summarized the different revenue models of energy storage in the fields of traditional power generation, renewable energy, auxiliary services and distributed energy and microgrid, and initially established a revenue model for energy ...

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