

International patent ranking of battery technology

Which patents are related to batteries?

There are patents related to various battery technologies such as Li-ion, Lead-acid, Ni-MH, Redox-flow, Na-ion, Mg-ion, Li-Air, and others. Patents also cover battery components like materials, electrodes, electrolytes, separators, battery cells, battery packs and systems, thermal management systems in batteries, and Battery Management Systems.

Which country has the most solid-state battery patents?

Patents that only apply in China are not included, though. For the past several years, Japan has led the way in solid-state battery innovation, consistently publishing more patents than any other country by a considerable margin. In this table, the top three ranks are occupied by Japanese firms.

Are alternative battery chemistries getting more patents?

Between 2012-2021, the number of patent families filed in CPC class H01M10/054, 13, which relates to alternative battery chemistries, has steadily increased. The trends follow those seen for redox flow and solid-state battery technology, with a steady growth in the number of patent families filed in this class.

How fast do batteries & electricity storage technology develop?

It reveals that between 2005 and 2018, patenting activity in batteries and other electricity storage technologies grew at an average annual rate of 14% worldwide, four times faster than the average of all technology fields. Innovation in Batteries and Electricity Storage - Analysis and key findings. A report by the International Energy Agency.

Are RFBs a viable alternative to lithium-ion batteries?

In some applications, RFBs can also provide a safer, more durable, and more scalable alternative to lithium-ion batteries. Patent activity surrounding RFBs indicates that they are of increasing interest.

Who are the top patent filers in the United States?

The top filers in the US, Canada, and Europe between 2017-2021 were US aerospace company Lockheed Martin (228 patent families) and Japanese company Sumitomo Electric Industries (433 patent families).

Shenzhou International Patents - Key Insights and Stats; DyeCoo Patents - Insights & Stats (Updated 2023) ... Tesla Motors is ranked as the world's best-selling plug-in ...

The market for battery energy storage is estimated to grow to \$10.84bn in 2026. The fall in battery technology prices and the increasing need for grid stability are just two ...

In all mobility-related fields of technology reviewed, Germany takes first place in the country ranking in terms

of applications filed. However, the trends in the individual fields ...

Shenzhou International Patents - Key Insights and Stats; DyeCoo Patents - Insights & Stats (Updated 2023) ... commercial vehicles, and other products. BYD also ...

This paper offers a comprehensive assessment of the trends and developments of battery innovation. Over 700,000 patents from the period of 2005-2019 are compiled and analyzed.

The Y02E 60/10 international patent classification (IPC) is a specific technology classification indicating climate change mitigation technologies relating to energy storage using ...

decade. By July 2023, the total number of RFBs patents in China reached 6344, accounting for 59.23% of the global patents, ranking first globally. 3. Analysis of major global RFBs patent ...

Therefore, the patent data after 2020 cannot exactly reflect the patent trends of battery assembly. The cell, module and pack were selected for patent analysis. To accurately ...

Battery Council International -- BCI Yearbook; European Lead Battery Conference -- ELBC; India Year Book; Reprints; ... November 17, 2024: Patent filings for ...

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The number of new international patents related to electricity storage has reached more than 7,000. The EPO-IEA is a testament to "this is because improving storage ...

The research distribution of the technology in different International Patent Classifications (IPC) can be revealed by analyzing the research field of the technology. ...

Overview of the 2017 worldwide patenting activity for each supply chain segment and each battery technology
New patent applications; ... Expired or revoked patents; Ranking of main patent applicants by supply chain segment and ...

Jiuhuan Energy Storage Technology is a battery manufacturer founded in 2003. Its ten patent families are related to solid-state battery cells with undefined solid electrolytes. ...

Japan was next with 1,192 patents, followed by the U.S.(719), South Korea(595) and France(128). China also stands out in the ranking of patents by organization. It has seven ...

Global Trends in Battery Technology: A Patent Perspective. 24 February 2023. As the drive towards

renewable energy use gains pace, there has been an increase in global patent filings relating to battery technology. While ...

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