

Which companies have patents for battery systems

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 many companies are involved in battery manufacturing?

Currently, there are thousands of companies globally involved in battery manufacturing, ranging from large multinational corporations to smaller, specialized firms. We present the largest and most influential battery manufacturers, exploring their market positions and strategies that have enabled them to dominate the industry.

Did you know?

Who has a patent on solid-state batteries?

Toyo Kohan's patent on solid-state batteries is co-filed with Toyota and is related to a sulfide all-solid-state battery. Nippon Denko's patents on solid-state batteries are related to a garnet lithium ion-conductive oxide material with high ionic conductivity.

Who makes the most EV batteries in the world?

China is the undisputed leader in battery manufacturing, dominating the global production of essential battery materials such as lithium, cobalt, and nickel. Chinese companies supply 80% of the world's battery cells and control nearly 60% of the EV battery market. 13. Ampere Technology Limited (ATL) 12. Envision AESC 11. Gotion High-tech 10.

Who makes vehicle energy batteries?

Vehicle Energy Japan is a Japanese battery manufacturer founded in 2004 as Hitachi Automotive Systems. The company changed its name in 2019 and was acquired by Nissan in 2022. Its two patent families on solid-state batteries are related to inorganic/polymer solid electrolyte sheets and their use in solid-state batteries.

How many Li-ion battery patents are there in 2022?

In 2022, more than 320 new patent applicants entered the solid-state Li-ion battery-related patent landscape, with three-quarters filing only one patent family (i.e., unique invention). Most of these IP newcomers are Chinese companies and R&D labs, with less than 30% of them publishing more than one patent family that year.

What do the latest patent statistics reveal about innovation in the battery power sector? What are the key areas suitable for patent protection? In this article we explore the newest patent...



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This patent provides a battery heating technique that preheats the battery from extreme cold condition (e.g., -30°C) to an appropriate operating temperature. This technique belongs to the battery energy storage and application field. The battery heating system includes a simple external control circuit and a battery (or battery pack) for heating.

Innovations targeting improvements in lithium-ion batteries focused on alternative metals have boosted patent applications. Promising trends in the battery sector's future are evident in patent filings, as revealed by the ...

Justia Patents Process Of Cell Operation US Patent for Battery system cooling Patent (Patent # 10,998,587) Battery system cooling . Jan 12, 2018 - Proterra Inc. An electric vehicle may include a battery system with a plurality of battery packs electrically connected together. Each battery pack of the plurality of battery packs may include a plurality of battery ...

Status of the Battery Patents -2017 Patenting Activity | April 2018 | Ref.: KM18004 METHODOLOGY FOR PATENT SEARCH AND SELECTION o The data were extracted from the FamPat worldwide database (Questel-ORBIT) which ...

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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). More than half of all patent families filed in the H01M8/188 class during this time were filed in the United States indicating its commercial ...

Major companies like Toyota, Samsung, and Hyundai are leading the way in patenting solid-state technology. Toyota leads the pack with 1,331 solid-state battery patents. The patents cover a broad mix of designs for solid-state batteries or solid electrolytes, charging ...

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Electric vehicle (EV) technology innovators are leading the race to find high performance battery materials. Here's a breakdown of current research and development efforts, and a look at how to patent different battery technologies. Lithium-ion -- Goodenough for a Nobel Prize

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. Leading patent...

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Major companies like Toyota, Samsung, and Hyundai are leading the way in patenting solid-state technology. Toyota leads the pack with 1,331 solid-state battery patents. The patents cover a broad mix of designs for solid-state batteries or solid electrolytes, charging and charge protection, coatings, and elements of the cell's construction.

Hyundai Patents An Innovative Pressurized Battery System . Hyundai Motor Company has filed a patent for a novel all-solid-state battery system equipped with a unique pressurization device. This ...

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