



# What is the battery management technology patent

While innovation in battery technology is still largely concentrated in a limited group of very large companies, in the US and Europe, smaller companies, universities and public research organisations also play a significant role. For the US, SMEs account for 34.4% ...

Its patent on solid-state batteries is related to a solid-state battery management system for high current applications. Other notable start-ups Meilleur Temps is a Swiss company founded in 2016 and specialized in the acquisition and licensing of patents.

The technology maintains battery state-of-charge to improve battery life and performance. In addition, the technology provides a fail-safe operation and a novel built-in electrical isolation for ...

PDF | On Jan 1, 2015, Jieming Liu and others published Patents Analysis on Electric Vehicle Power Battery Technology in China | Find, read and cite all the research you need on ResearchGate China ...

Justia Patents With Battery Or Cell Condition Monitoring (e.g., For Protection From Overcharging, Heating, Etc.) US Patent for Battery management system Patent (Patent # 10,797,499) Battery management system Dec 21, 2016 - SZ DJI Systems, methods ...

A battery management system (BMS) is one of the core components in electric vehicles (EVs). It is used to monitor and manage a battery system (or pack) in EVs. This ...

Batteries can unlock other energy technologies, and they're starting to make their mark on the grid.

As a high-end local Chinese EV company, Nio has more patents than Xpeng Motors and Li Auto. Through these patents, we can also get a glimpse of the company's layout in technology development. As of April 8, Nio has applied for 3,184 patents worldwide. has applied for 3,184 patents worldwide.

DOE/EE Publication Number: 2370 The Influence of Advanced Battery Patents Funded by the U.S. Department of Energy's Vehicle Technologies Office and Other DOE Offices Report ...

A battery management system (BMS) is any electronic system that manages a rechargeable battery (cell or battery pack) by facilitating the safe usage and a long life of the battery in practical scenarios while monitoring and estimating its various states (such as SoH, and SoC), [1] calculating secondary data, reporting that data, controlling its environment, authenticating or ...

the utility model provides a battery management system of an electric automobile, which comprises a battery pack, single battery voltage sensors, a current and voltage control ...



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a battery management method includes determining, by a battery management system, a load and energy estimation model based on at least one acquired parameter associated with the battery,...

Based on the data of the patent application on the EVs battery technology, this paper intends to analyze from the overall trend of the patent, distribution of the patent type, ...

From solid-state batteries to silicon anodes and fast-charging technologies to advanced thermal management systems, these patents showcase upcoming developments. Understanding these trends forms the basis for further research, enabling us to anticipate the industry's trajectory and align our efforts accordingly.

The top 25 applicants in battery technology, 2000-18. Credit: European Patent Office The EPO told us: "Battery deployments in these two countries [Japan and Korea] is strongly related to the energy policies adopted by the two countries.

Samsung captured the spotlight by announcing its groundbreaking solid-state battery technology at the InterBattery conference held on November 5, 2023, in Seoul, South Korea. This next-generation battery is ...

The main purpose of this article is to review (i) the state-of-the-art and emerging batteries, and (ii) the state-of-the-art battery management technologies for EVs ...

In energy storage, the 4680 battery has emerged as a groundbreaking innovation, arguably one of the most significant advancements in battery technology over the past century. Developed by Tesla ...

Japan remains a powerhouse of battery innovation, with Panasonic, Toyota Motor and other names applying for more than one-third of international patents in the field, a new report shows. Japan ...

Battery-powered vehicles will account for around 20 percent of global road traffic by 2030. But there are already concerns that there will not be enough of the raw materials needed to manufacture them. At the same time, the first wave of used batteries from the first ...

We also found that patent applications account for 74% of the Li-ion battery recycling literature, whereas patents are outnumbered by journal articles 2:1 in the entire CAS Content Collection, showing the high commercial value of technologies and discoveries

Patents are being sought for the battery cell and its assembly, the module pack case (e.g. gas venting designs), battery connectors and the thermal and battery management system including hardware ...

A review on research status and key technologies of battery thermal management and its enhanced safety July 2018 International Journal of Energy Research 42(15) DOI:10.1002/er.4158 Authors: Yan ...



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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 ...

While redox flow battery technology experienced a peak in patent filings in 2018, a 30% decline occurred in 2021. Despite its potential scalability for large energy sources such as solar and wind, redox flow battery ...

Batteries, both primary and rechargeable, are important energy storage devices ubiquitous in our daily, modern lives. Whether in our handheld portable electronics, conventional or hybrid/electric cars, or in the electrical "grid," battery technology will continue to evolve ...

The battery management system (BMS) in EV operation is necessary to monitor battery current, voltage, temperature; examine battery charge, energy, health, equalize the ...

Power battery is the source of electric vehicle, which directly affects the performance and use cost. Through patent retrieval and patent analysis conclusion is palpable: China's power battery technology has been growing maturity gradually in recent ten years ...

Beam Global Granted European Patent for Thermal Management Technology that Makes Lithium-ion Batteries Safer... SAN DIEGO, Feb. 22, 2024 (GLOBE NEWSWIRE) -- Beam Global, (Nasdaq: BEEM, BEEMW), a ...

At Blue Current we believe that safe, high-performance battery technology gives engineers the power to create new products and experiences not possible before. Thinner, lighter and longer lasting batteries that are more reliable and ...

Today, let us talk about Tesla's battery management technology based on the patent of the multi-channel and bi-directional battery management system released by Tesla.

4. WHAT IS BMS? Battery Management System or BMS is the system designed to monitor the performance and state of the battery and ensure that it works in its safe operating region. In other words it can be said that "the basic task of a Battery Management ...

Battery management system. Abstract. A method and apparatus are disclosed for a Battery Management System (BMS) for the controlling of the charging and discharging of a plurality of ...

There are various aspects of battery technology which can be patented. For example, while the most common additional classifications for patents in the Y02E 60/10 class in 2023 were for secondary ...

A Battery Management System (BMS) is an electronic system that manages and monitors the charging and



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discharging of rechargeable batteries. A given BMS has many different objectives such as: I/V (current/voltage) monitoring, cell balancing, temperature ...

Proportion of patent compared in main kinds of vehicle battery technology 4.2. Trend analysis of patent application for EV battery technology Through the years of Chinese patent application data, we found that the number of EV battery technology patent was

This report analyses the trends and developments to Li-ion cell and battery pack technology for electric vehicles by studying developments from both automotive OEMs and battery pack manufacturers serving non-car markets. Players and developments in battery management systems are also covered. Demand for Li-ion batteries is forecasted for electric cars, vans, ...

With LiFePO<sub>4</sub> battery packs based on "cylindrical cells (e.g. 26650 type cells that look like a flashlight D-cell)", I often see the recurring comment "The battery management system monitors individual cells in the battery pack." Isn't it more the case that Battle Born ...

Solid-state batteries can use a wide range of chemistries, but a leading candidate for commercialization uses lithium metal. QuantumScape, for one, is focused on that technology and raised hundreds ...

Summary &lt;p>>A battery management system (BMS) is one of the core components in electric vehicles (EVs). It is used to monitor and manage a battery system (or pack) in EVs. This chapter focuses on the composition and typical hardware of BMSs and their representative commercial products. There are five main functions in terms of hardware ...

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