Battery Patent

Are lithium-ion batteries patentable?
To be very clear: This especially means that the lithium-ion battery category does not contain any patent familiestagged as solid-state battery inventions. The fourth step's purpose was to add patent data related to redox-flow and nickel-hydrogen batteries to the dataset.

Where do battery patents come from?
The majority of battery patents are found to originate in Asiawhile high battery patent intensities are revealed in the performance of several Asian and European countries. Overall,a considerable increase in annual battery patenting activity is observed from 2000-2009 to 2010-2019.

Why is battery patenting a global trend?
We find that global battery patenting activity grew significantly in the 2000-2019 period. This stylized fact means that the comparative advantages of secondary approaches (rechargeable, redeployable, reusable batteries) have been continuously on the rise driven by innovation, making a direct contribution to socio-technical circularity.

Which technologies grew in relevance to battery patenting?
We find that several battery-related technologies and applications, such as energy storage systems, battery management systems, wireless power transmission, electric vehicle charging, and uncrewed aerial vehicles (i.e., drones), grew in relevance both in absolute terms and relative to general battery patenting activity.

Are battery patents growing?
Overall,a considerable increasein annual battery patenting activity is observed from 2000-2009 to 2010-2019. Second,we also found that four battery technologies - redox-flow,solid-state,sodium-ion,and lithium-sulfur batteries - have displayed vibrant growth in recent years.

How many battery patents are there in the world?
Over 90,000battery inventions from the period 2000-2019 analyzed. Patent data explored from technometric and textmetric perspectives. Global battery patenting activity growth mostly originating in Asia. Three country clusters emerge with different circularity potentials. Battery advances so far suggest incomplete circular transition.

In-depth analysis of the Li-ion patent landscape, focussing on cell materials and technologies, including further analysis of NMC and Li- and Mn-rich cathodes, silicon anodes, liquid ...

Weighing in at nearly 100 pages, the recent detailed report on innovation ...

As the drive towards renewable energy use gains pace, there has been an increase in global patent filings

relating to battery technology. While lithium-ion batteries currently dominate the battery market, they have several ...

Building on the work of the Swedish inventor Ernst Waldemar Jungner, who first patented a nickel-iron battery in 1899, Edison sought to refine the battery for use in automobiles.

a fully solid-state battery is described in Japanese Patent Application Publication No. 06-275274 (JP-A-06-275247) in which the power generation element is sealed by a high-temperature ...

Battery technology developers are obtaining patents for innovations across all ...

Battery technology developers are obtaining patents for innovations across all parts of the cell and battery to maximise their commercial positions. Continued growth in ...

We prepared patent applications for battery safety systems, charging and discharging algorithms, and controlling the drawing of energy from hybrid power systems. High-voltage direct current ...

An improved lithium-ion or lithium-polymer battery that is capacity-fade resistant. The battery ...

The success of a battery patent application relies on the seamless integration of technical expertise and legal acumen. Partnering with experienced legal professionals who ...

Abstract: This paper firstly composes the relevant policies and points introduced for the battery industry at the national level; further digs into the patent trend and technology layout of China"s ...

An iron-air battery has an open circuit cell voltage of about 1.28V and a theoretical energy density of 764 Wh/kg. While the current densities are at least an order of magnitude higher than would ...

An improved lithium-ion or lithium-polymer battery that is capacity-fade resistant. The battery includes an anode comprised of graphite where density of the graphite is in a range from 1.2 to...

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 ...

This study builds on battery patents that can roughly be characterized in the ...

Status of the Battery Patents -2017 Patenting Activity | April 2018 | Ref.: KM18004 KEY ...

The rapid rise in battery-related patent applications underscores a growing drive towards sustainable power in the race to reach net zero. EPO statistics emphasise the areas ...

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KIPO established a consolidated examination department dedicated to secondary battery applications in June 2024. By this reorganization, all 45 examiners handling secondary battery ...

2018 battery patent watch service: get updated data on battery patent activity. With the booming number of companies involved in battery IP and the proliferation of battery technologies, take ...

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