



Lithium battery technology patent distribution

Justia Patents US Patent Application for LITHIUM-ION BATTERY RECYCLING PROCESSES AND SYSTEMS Patent ... Lithium-ion battery technology is considered as the best near-term energy storage technology due to its high power and energy density, long cycle life, high potential and low self-discharge rate. ... shows that it ...

Section snippets Historical development, status quo and current challenges. LIB research had its first breakthrough in the 1970s, when Whittingham demonstrated the use of a titanium disulphide (TiS₂) cathode in a secondary battery with a lithium metal anode [22]. This was followed by further studies with Gamble, Besenhard ...

Latest TeraWatt Technology Inc. Patents: ... In lithium-ion battery cells, lithium ions can move from a positive electrode to a negative electrode during charging of the battery cell and move back from the negative electrode to the positive electrode during discharging of the battery cell. ... The inhomogeneous or uneven distribution of lithium ...

BUDAPEST, Hungary -- Tulip Innovation Kft. today announced the launch of a new licensing program aggregating patents related to lithium-ion battery technology from LG Energy Solution, Ltd. (LG Energy Solution) and Panasonic Energy Co., Ltd. (Panasonic Energy).

The most suitable technology realm for clustering was found to be spanned by the countries' distribution values over the four emerging technologies lithium-sulfur, ...

Lithium-ion battery technology is considered as the best near-term energy storage technology due to its high power and energy density, long cycle life, high potential and low...

Especially, Li-S battery technology experienced an exponential growth. As already mentioned in Section 2.1, this sudden increase in patenting of Li-S battery technology could be associated with the major breakthrough in the cycle performance in 2009. While the number of yearly patent filings of SIB technology almost tripled ...

Currently, the main drivers for developing Li-ion batteries for efficient energy applications include energy density, cost, calendar life, and safety. The high energy/capacity anodes and cathodes needed for ...

A lithium-ion battery includes a positive electrode including a positive current collector, a first active material, and a second active material. ... 2004-10-29 Priority to US10/979,043 priority Critical patent/US7807299B2/en ... [GHG] EMISSIONS, RELATED TO ENERGY GENERATION, TRANSMISSION OR DISTRIBUTION.



Lithium battery technology patent distribution

The ever-developing society and economics call for advanced energy storage devices with higher energy/power density, better safety, longer service life, low CO₂ emission, environmental benignity, and lower cost. As the leading electrochemical energy storage technology, lithium-ion batteries (LIBs) are currently widely adopted in ...

Firstly, a detailed patent bibliometric analysis including patent growth trends, keyword analysis, patent distribution over jurisdiction, and subject categories was presented. ... this study uncovers the knowledge contribution from science to technology in the lithium-ion battery from a more comprehensive view by proposing a paper-patent ...

This document outlines a U.S. lithium-based battery blueprint, developed by the . Federal Consortium for Advanced Batteries (FCAB), to guide investments in . the domestic lithium-battery manufacturing value chain that will bring equitable . clean-energy manufacturing jobs to America. FCAB brings together federal agencies interested

Lithium-ion battery technology is considered as the best near-term energy storage technology due to its high power and energy density, long cycle life, high ...

A lithium-ion battery includes a positive electrode including a positive current collector, a first active material, and a second active material. The battery also includes a negative...

Research from JCESR has revealed ways to make flow batteries even more energy dense and efficient than they are today. Within their intellectual property are patents that address some of the ...

o In advanced batteries technology, in the period 1976-2018, we identified a total of 35,655 patents (12,202 U.S. patents, 9,303 EPO patents and 14,150 WIPO patents). We grouped these patents into 22,644 patent families, with each family containing all patents ...

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, multidisciplinary ...

Rising EV battery demand is the greatest contributor to increasing demand for critical metals like lithium. Battery demand for lithium stood at around 140 kt in 2023, 85% of total lithium demand and up more than 30% compared to 2022; for cobalt, demand for batteries was up 15% at 150 kt, 70% of the total.

The University of Texas at Austin has announced an agreement with Canada-based Hydro-Quebec for lithium-ion material technology invented and patented by Dr. John Goodenough, a world-renowned scientist at the university and professor in the Mechanical Engineering Department.. The agreement brings a significant upfront ...



Lithium battery technology patent distribution

According to GlobalData's company profile on A123 Systems, Battery management systems was a key innovation area identified from patents. A123 Systems's grant share as of September 2023 was 53%. Grant share is based on the ratio of number of grants to total number of patents. Electrode for lithium-ion battery cell with improved ...

With the ever-growing energy demands, new battery chemistries beyond lithium ion technology are required to deal with an increased power consumption and promote the vehicle electrification.

Battery technology developers are obtaining patents for innovations across all parts of the cell and battery to maximise their commercial positions. Continued growth in patenting activity is evident and proving very effective, particularly for start-ups and smaller businesses, where protection for very specific aspects of a battery or cell ...

Innovative clean-tech company is poised to revolutionize lithium-ion battery recycling with low-temperature plasma-assisted separation process (LPAS(TM)). BORDENTOWN, N.J., Nov. 6, 2023 /PRNewswire ...

Request PDF | Grid-connected lithium-ion battery energy storage system towards sustainable energy: A patent landscape analysis and technology updates | Presently, as the world advances rapidly ...

Advancing portable electronics and electric vehicles is heavily dependent on the cutting-edge lithium-ion (Li-ion) battery technology, which is closely linked to the properties of cathode materials. Identifying trends and prospects of cathode materials based on patent analysis is considered a kernel to optimize and refine battery related markets. ...

Lithium-ion battery (LIB) is one of rechargeable battery types in which lithium ions move from the negative electrode (anode) to the positive electrode (cathode) during discharge, and back when charging. It is the most popular choice for consumer electronics applications mainly due to high-energy density, longer cycle and shelf life, ...

Tulip Innovation Launches New Patent Licensing Program based on LG Energy Solution and Panasonic Energy Lithium-Ion Battery Technologies. Thursday, May 30, 2024 5:08PM IST (11:38AM GMT)

HOUSTON, Aug. 4, 2021 /PRNewswire/ -- Ascend Performance Materials has successfully challenged a lithium-ion battery technology patent held by Samsung SDI. In a final written decision, the U.S ...

Engineers at the Naval Surface Warfare Center's Expeditionary and Developmental Power and Energy Branch recently developed and filed a patent for a modular, field configurable Lithium 6T (Li6T) Top Cap direct current (DC) power distribution device. In less than 30 seconds, the device can be installed and mounted on top of a Li6T battery.



Lithium battery technology patent distribution

We propose the significance of patent claims in the technological trajectory of lithium battery manufacturing (LBM-Tra) research. And we construct a ...

The thermal runaway chain reaction of batteries is an important cause of the battery energy storage system (BESS) accidents, and safety protection technology is the key technology to protect the BESS.

SOLiTHOR's initial focus is on Aviation, Urban Air Mobility and Aerospace providing a unique rechargeable all-solid-state lithium battery cell technology which is a step-change advancement ...

We focus on the case of lithium-ion battery (LIB) technology from 1970 to 2018. We use a dataset of 101,620 patent families to identify and analyze the LIB industry's core knowledge trajectory.

The research highlights two prominent factors in the field of grid-connected LIB ESS patents. Firstly, a detailed patent bibliometric analysis including patent growth ...

Presently, as the world advances rapidly towards achieving net-zero emissions, lithium-ion battery (LIB) energy storage systems (ESS) have emerged as a critical component in the transition away from fossil fuel-based energy generation, offering immense potential in achieving a sustainable environment. This study conducts an in ...

Web: <https://saracho.eu>

WhatsApp: <https://wa.me/8613816583346>