

What is the patented rechargeable battery technology

When did rechargeable battery technology start?

Nevertheless, rechargeable battery technology which truly revolutionised electrical energy storage came with the introduction of LiBs at commercial scale in early 90s on the back of research drive started in early 1970s by M.S Whittingham and later enhanced in mid 1980s by John B. Goodenough.

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.

Where do battery patents come from?

The majority of battery patents are found to originate in Asia while 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.

What is a rechargeable battery?

2. Historical development of rechargeable batteries Batteries are by far the most effective and frequently used technology to store electrical energy ranging from small size watch battery (primary battery) to megawatts grid scale energy storage units (secondary or rechargeable battery).

How fast do batteries & electricity storage technology patents grow?

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, according to a new joint study published today by the European Patent Office (EPO) and the International Energy Agency.

How are rechargeable batteries developed?

Historically, technological advancements in rechargeable batteries have been accomplished through discoveries followed by development cycles and eventually through commercialisation. These scientific improvements have mainly been combination of unanticipated discoveries and experimental trial and error activities.

Dual-carbon batteries (DCBs), a subcategory of LIBs, are rechargeable batteries that use cheap and sustainable carbon as the active material in both their anodes and cathodes with their active ions provided by the electrolyte formulation. ...

The report, Innovation in batteries and electricity storage - a global analysis based on patent data, shows that batteries account for nearly 90% of all patenting activity in the area of electricity storage, and that the rise in ...

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In 1980, the American John B. Goodenough created a rechargeable battery that could generate even more energy. To achieve this, he used cobalt oxide. Patents were also assigned to Goodenough's work. In the first half of the 1980s, the Japanese Akira Yoshino worked on improving this.

Every year the world runs more and more on batteries. Electric vehicles passed 10% of global vehicle sales in 2022, and they're on track to reach 30% by the end of this decade.. Policies around ...

MIT engineers designed a battery made from inexpensive, abundant materials, that could provide low-cost backup storage for renewable energy sources. Less expensive than lithium-ion battery technology, the new architecture uses aluminum and sulfur as its two electrode materials with a molten salt electrolyte in between.

The report, Innovation in batteries and electricity storage - a global analysis based on patent data, shows that batteries account for nearly 90% of all patenting activity in the area of electricity storage, and that the rise in innovation is chiefly driven by advances in rechargeable lithium-ion batteries used in consumer electronic devices ...

A rechargeable battery cell has been patented with a unique design that includes a negative electrode made of lithium metal supported on a metalized plastic film, a positive electrode with an intercalation material, a separator, and an ionic liquid electrolyte. The metalized plastic film can be a copperized plastic film with a ...

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

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