Non-negative metal battery technology patent

Are alternative battery chemistries getting more patents?
Between 2012-2021,the number of patent families filed in CPC class H01M10/054,13which 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.

Will CATL develop solid-state lithium batteries with lithium metal negative electrodes?
In January 2021,there were reports that CATL is developing solid-state lithium batteries with lithium metal negative electrodes,and that upon solving all technology /process issues,400 Wh/kg energy density could be achieved.

What are alternative battery chemistries?
For example,sodium and aluminiumchemistries provide two potential alternatives to traditional lithium-based battery chemistries.10 One reason for the interest in alternative battery chemistries is based on supply chain issues relating to lithium and its co-metals nickel,cobalt,and manganese.

Can sodium ion batteries replace lithium?
Although their charge densities tend to be lower than lithium-based batteries,sodium-ion batteries are well suited to use in static storage and low-cost electric vehicles,such as e-bikes,and may soon replace lithiumas a preferred battery chemistry for these applications.

What is a solid state battery?
Solid State Batteries Solid state battery technology provides a promising means of overcoming some of the problems associated with traditional liquid electrolyte lithium batteries. Solid-state batteries use solid ceramic or polymer-based electrolytesinstead of the traditional solvent-based liquid electrolytes.

Are RFBS a viable alternative to lithium-ion batteries?
In some applications,RFBs can also provide a safer,more durable,and more scalable alternativeto lithium-ion batteries. Patent activity surrounding RFBs indicates that they are of increasing interest.

Evaluating a Nickel-Metal Hydride (NiMH) Battery Regeneration Patent Based on a Non-Intrusive and Unsupervised Prototype by Rafael Martínez-Sánchez

1 ??· Solid-state batteries (SSBs) hold the potential to revolutionize energy storage systems by offering enhanced safety, higher energy density, and longer life cycles compared with ...

the method for manufacturing a nickel-metal-hydride battery including the steps of: assembling and sealing a nickel-metal-hydride battery comprising a positive electrode including a nickel...

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Efforts to address these issues have resulted in an uptick in innovative activity with respect to redox flow batteries, solid state electrolytes, and alternative non-lithium ion chemistries. This article provides an overview of ...

batteries Review Reviews on the U.S. Patents Regarding Nickel/Metal Hydride Batteries Shiuan Chang 1, Kwo-hsiung Young 2,3,*, Jean Nei 3 and Cristian Fierro 3 1 Department of ...

A metal-air battery includes a metal negative electrode (12), an oxygen-generating electrode placed on a surface of the metal negative electrode, and an air electrode placed on another ...

General patent portfolio characteristics 7 new patent families by Umicore have been published since 2022 that are related to high-energy Li-ion battery anodes (without lithium metal anodes). 3 new lithium metal anode ...

Although the full makeup of Alsym"s battery is still under wraps as the company waits to be granted patents, one of Alsym"s electrodes is made mostly of manganese oxide ...

Selective works from 39 battery manufactures, 9 metal hydride alloy suppliers, 13 Ni(OH) 2 suppliers, 20 hardware suppliers, 19 system integrators, universities, and 12 ...

Patents by Additional Companies Covered in Triweekly Patent Updates 275 Deep Dive - Lithium Metal Negative Electrodes for Solid-state and Semi-solid Li-ion Batteries ...

[0018] In some embodiments, the invention provides an all-iron redox flow cell comprising:a first half-cell comprising a positive electrolyte and a non-metal plating electrode; a second half cell ...

The battery also includes a negative electrode having a negative current collector and a third active material, the third active material including a lithium titanate material. ... 2004-10-29 ...

the battery of FIG. 1 may comprise a negative electrode including calcium metal or aluminum metal, respectively, with the electrolyte including the appropriate electrolytically active ionic ...

As the energy consumption rate is surging vigorously, lithium-ion batteries can hardly satisfy the demand for storing clean energies owing to the deficient storage (65 ppm in ...

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

This paper also openly prepares the method for nickel metal hydride battery, comprise and positive pole with positive electrode is provided, provides the source beyond the negative pole ...

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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 ...

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