

Who has a patent on solid-state batteries?

Toyo Kohan's patent on solid-state batteries is co-filed with Toyota and is related to a sulfide all-solid-state battery. Nippon Denko's patents on solid-state batteries are related to a garnet lithium ion-conductive oxide material with high ionic conductivity.

What is a solid state battery?

According to one embodiment, a solid state battery is disclosed. The method is performed in a moisture-free inert atmosphere. The method includes combining unreacted solid electrolyte precursors to form a green sheet. The method further includes stacking the green sheet in between porous electrodes to form a solid state battery.

Does knowmade patent solid-state Li-ion batteries?

That is why KnowMade is monitoring patenting activity on solid-state Li-ion batteries to complete its two recent reports on solid electrolytes for Li-ion batteries and solid-state Li-ion batteries with inorganic solid electrolytes.

Who invented solid-state batteries in 2022?

Several American companies entered the patent landscape in 2022, with the first patent on solid-state batteries being published that year. These companies include material manufacturers Ntherma, Zymergen, Ascend Element, PIDC, NEI Corporation and Huntsman, as well as the battery manufacturer EnPower Greentech.

Are solid-state batteries patentable in Japan?

Even though most Japanese companies had started filing patents on solid-state batteries many years earlier, some of them only joined the IP landscape in 2022, such as material manufacturers (Toyo Kohan, Nippon Denko), battery manufacturers (Prime Planet Energy & Solutions, Vehicle Energy Japan) and OEMs/end users (Futaba, Tripod Design, Softbank).

What makes pure lithium a solid state battery?

Its patent on solid-state batteries is related to lithium containing nano powders and/or mechanical alloys containing garnet solid electrolytes and their manufacturing methods. Pure Lithium, established in 2019, commercializes lithium metal negative electrodes.

While the previous patent related specifically to the materials of the electrolyte, a further recent granted patent addresses structural aspects of an all-solid-state battery laminate. ...

The all-solid-state battery includes a positive electrode layer, a separator layer, and a negative electrode layer. The separator layer includes a sulfide solid electrolyte. In a ...

Justia Patents U.S. Patent Application for ALL SOLID STATE BATTERY Patent Application (Application #20230102548) ALL SOLID STATE BATTERY . Sep 15, 2022 - ...

A solid state battery construction is disclosed wherein the anode structure can be formed from one of the compounds selected from the group consisting of lithium, lithium and magnesium, ...

A method of fabricating a solid-state battery is disclosed. The method comprises providing a substrate (102) and casting a cathode slurry (108) comprising a cathode active material and an ...

A solid-state battery of the present disclosure includes: a negative electrode layer including a negative electrode active material; a positive electrode layer; a solid ...

Japanese automaker Toyota leads in solid-state battery patents, having been awarded some 8,274 solid-state battery grants over the past three years, according to ...

Justia Patents US Patent Application for ALL SOLID STATE BATTERY Patent Application (Application #20210242492) ALL SOLID STATE BATTERY . Jan 22, 2021 - ...

A solid-state battery (SSB) is an electrical battery that uses a solid electrolyte to conduct ions between the electrodes, ... On December 28, 2023, Hyundai published its patent for an "all ...

QuantumScape's solid-state battery is packed full of innovation that places the battery distinctly apart from lithium-ion technology batteries and other solid-state designs: · ...

Along with Tokyo-based research firm Patent Consult, Nikkei studied patent applications for solid-state battery tech in ten countries and territories filed from 2000 through the end of March of ...

An all-solid-state battery in which a positive electrode active material layer, a solid electrolyte layer, a negative electrode active material layer, and a negative electrode ...

U.S. patent application number 16/497324 was filed with the patent office on 2021-04-29 for solid electrolyte material and solid-state battery made therewith. The applicant listed for this patent ...

Within the solid-state battery patent landscape, Toyota is the primary Japanese company. Toyota has co-filed numerous patents with research organizations and companies, establishing a robust collaborative network. Consequently, Toyota ...

Huawei has recently issued a new patent regarding solid-state battery tech. It would be a wonderful implementation in the energy storage sector. It will further act as a vital ...

Key Patent in Solid State Battery All-Solid Battery And Manufacturing Method For All-Solid Battery

(JP2022108509A) This all-solid battery includes a power generation ...

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