Patented technology for new energy battery separator

What is a battery separator?
The battery separator is one of the most essential components that highly affect the electrochemical stability and performance in lithium-ion batteries. In order to keep up with a nationwide trend and needs in the battery society, the role of battery separators starts to change from passive to active.

Why is a functionalized battery separator important?
Safetyis one of the most important concerns when considering battery applications. Many safety issues in Li-ion cells,such as dendrite growth and thermal resistance,pertain to the separator component. Improving the functionalized separator could further enhance the safety performance and create new functions for batteries.

Do modified separators improve battery performance?
Although many batteries with modified separators were reported to have high performance,it is a challenge to improve the performance of the batteries while maintaining a long-life cycle,high sulfur loading,or low electrolyte/sulfur (E/S) ratio.

Are battery separators active or passive?
In order to keep up with a nationwide trend and needs in the battery society,the role of battery separators starts to change from passive to active. Many efforts have been devoted to developing new types of battery separators by tailoring the separator chemistry.

Can a porous battery separator be used in a lithium ion rechargeable battery?
A novel porous battery separator has been developed for use in a lithium ion rechargeable battery.

Which polyolefin is used to fabricate battery separators?
Two representative polyolefins,i.e. polypropylene(PP) and polyethylene (PE),are typically used for fabricating battery separators . Methodologies to fabricate battery separators are sorted into two methods: (1) wet method and (2) dry method .

Founded out of Princeton University in 2019, PNE developed a patented direct recycling technology for lithium-ion batteries. The low-temperature plasma-assisted separation process, trademarked as LPAS, produces battery ...

Battery technology is at the forefront of modern consumer and industrial markets. Developments have come a long way over the past 25 years, but innovation has increased significantly during the last five. Li-ion batteries have advanced rapidly and now have increased energy density and long cyclic stability. Such innovation presents opportunities for ...

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Lithium-ion batteries (LIBs) with liquid electrolytes and microporous polyolefin separator membranes are ubiquitous. Though not necessarily an active component in a cell, the separator plays a key ...

An ultra-thin coated battery separator is ideal for maximising the energy density within the confines of safety and avoiding electrical shorting between the electrodes and the ...

Because lithium-ion batteries are able to store a significant amount of energy in such a small package, charge quickly and last long, they became the battery of choice for new devices. But new battery technologies ...

Many efforts have been devoted to developing new types of battery separators by tailoring the separator chemistry. In this article, the overall characteristics of battery separators ...

Diverse applications of Blade Battery Electric Vehicles (EVs): Blade Battery technology can be employed in electric vehicles, offering enhanced safety, increased energy density, and longer ...

New or improved battery separators for lead-acid batteries that include a carbon or mineral additive applied to the separator. In possibly preferred embodiments, the battery separator...

The instant invention is directed to a separator for a high energy rechargeable lithium battery and the corresponding battery. The separator includes a ceramic composite layer and a...

Microvast is making battery technology for electric vehicles, stationary battery storage markets and other applications. The company holds patents on its wet-process technology to produce a thin polyaramid base film. The polyaramid separator offers an option to widely used polyethylene and polypropylene-based separators.

Founded out of Princeton University in 2019, PNE developed a patented direct recycling technology for lithium-ion batteries. The low-temperature plasma-assisted separation process, trademarked as LPAS, produces battery-grade cathode and anode materials suitable for direct reintroduction into cell manufacturing. The company reports ...

The properties and characteristics of a lithium-ion battery separator are vital for performance and safety. Here, we analyse recent patent activity and examines Morgan Advanced Materials" important new patent, which relates to ionic conducting compositions for energy ...

Most technologies of the future, such as artificial intelligence, Edge computing, 5G, electric vehicles, augmented reality and virtual reality - all require greater battery energy density. Building and scaling a battery ...

<p>Separators play a critical role in lithium-ion batteries. However, the restrictions of thermal stability

and inferior electrical performance in commercial polyolefin separators significantly limit their applications under harsh conditions. Here, we report a cellulose-assisted self-assembly strategy to construct a cellulose-based separator massively and continuously. With an ...

The design of separators for next generation Li batteries can be approached from two different perspectives: prevention of dendrite growth via chemical and physical ...

An ultra-thin coated battery separator is ideal for maximising the energy density within the confines of safety and avoiding electrical shorting between the electrodes and the associated rapid increase in temperature and the risk of fire or explosion.

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