

Can a negative electrode material be used for Li-ion batteries?

We have developed a method which is adaptable and straightforward for the production of a negative electrode material based on Si/carbon nanotube (Si/CNTs) composite for Li-ion batteries.

What is negative electrode technology of lithium-ion batteries (LIBs)?

1. Introduction The current state-of-the-art negative electrode technology of lithium-ion batteries (LIBs) is carbon-based(i.e.,synthetic graphite and natural graphite) and represents >95% of the negative electrode market .

Why are lithium-ion batteries made of carbon?

This is necessary in order to meet the demands of the market. At this time, the anode materials for commercial lithium-ion batteries are predominantly made of carbon, which has capacity limitations.

Can CNT composite be used as a negative electrode in Li ion battery?

The performance of the synthesized composite as an active negative electrode material in Li ion battery has been studied. It has been shown through SEM as well as impedance analyses that the enhancement of charge transfer resistance,after 100 cycles,becomes limited due to the presence of CNT network in the Si-decorated CNT composite.

Can carbon fibers be used as active negative material in structural batteries?

Decreasing the current by a tenth yielded an increase of capacity of around 100% for all the tested grades. From the measurements performed in this study it is evident that carbon fibers can be usedas the active negative material and current collector in structural batteries. Export citation and abstract BibTeX RIS

What are the recent trends in electrode materials for Li-ion batteries?

This mini-review discusses the recent trends in electrode materials for Li-ion batteries. Elemental doping and coatings have modified many of the commonly used electrode materials, which are used either as anode or cathode materials. This has led to the high diffusivity of Li ions, ionic mobility and conductivity apart from specific capacity.

This concept article describes a series of structurally-unique carbon-based materials that have been used in Li storage applications and includes an examination of the ...

Potential vs. capacity profile for the first cycle of hard carbon prepared by pyrolysis of sugar when tested against sodium metal counter electrodes at C/10 in 1M NaClO ...

We have developed a method which is adaptable and straightforward for the production of a negative

electrode material based on Si/carbon nanotube (Si/CNTs) composite ...

Today, most rechargeable batteries are lithium-ion batteries, which are made from relatively scarce elements-this calls for the development of batteries using alternative ...

Negative electrode materials can be divided into carbon-based and non-carbon-based materials. Non-carbon-based materials have higher theoretical capacities, as ...

Lithium-ion batteries (LIBs) have become the preferred battery system for portable electronic devices and transportation equipment due to their high specific energy, ...

The silicon-based materials were prepared and examined in lithium cells for high-capacity lithium-ion batteries. Among the materials examined, "SiO"-carbon composite showed ...

Abstract Sodium-ion batteries have been emerging as attractive technologies for large-scale electrical energy storage and conversion, owing to the natural abundance and low cost of sodium resources. However, the ...

Abstract Among high-capacity materials for the negative electrode of a lithium-ion battery, Sn stands out due to a high theoretical specific capacity of 994 mA h/g and the ...

The pursuit of new and better battery materials has given rise to numerous studies of the possibilities to use two-dimensional negative electrode materials, such as ...

2 ???&#0183; Coating a carbon layer on the surface of the current collector can enhance the performance of lithium-ion batteries by improving the interfacial conductivity and the adhesion ...

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