Sodium-sulfur battery Wen Zhaoyin

Are all-solid-state lithium sulfur batteries based on ceramic electrolytes safe?
All-solid-state lithium sulfur (Li-S)batteries based on ceramic electrolytes provide great promise for solving "shuttle effect" and security issues. However, poor interfacial solid-solid contact and serious side reaction with lithium metal anode still hold back the development of inorganic solid electrolyte at current stage.

Are solid-state sodium-ion batteries safe?
Solid-state sodium-ion batteries with sodium metal anodes possess high safetyand reliability,which are considered as a promising candidate for the next generation of energy storage technology. However,poor electronic and ionic conductivities at the interface between electrodes and solid-state electrolytes restrict its practical application.

What are molten-sodium beta-alumina batteries?
Molten-sodium beta-alumina batteries including sodium-sulfur (NAS) and sodium-metal chloride (ZEBRA) batteries have been considered as promising candidates for reliable low-cost stationary energy storage devices.

Can sodium dendrite be used for high energy density batteries?
Sodium metal batteries (SMBs) with potentially high theoretical capacity are considered as one of the most promising candidates for high energy density batteries. However,the safety problems caused by sodium dendrite seriously hinder the practical applicationof SMBs.

Can silicene be used as an anode material in lithium-ion batteries?
Silicene has recently received increasing attention as an anode material in lithium-ion batteries (LIBs) due to its unique architectural properties. However, the synthesis of silicene still remains challenging, which limits its practical applications.

Can transition-metal compounds inhibit the shuttle effect in lithium-sulfur (Li-S) batteries?
Recently,transition-metal compounds (TMCs) with unique adsorptive and catalytic properties have shown great promisein lithium-sulfur (Li-S) batteries to inhibit the shuttle effect.

Jiu Lin"s 16 research works with 281 citations and 745 reads, including: Bi-doped borosilicate glass as sealant for sodium sulfur battery. ... Zhaoyin Wen; Xiaogang Xu; Zhonghua Gu;

The sodium sulfur (Na/S) battery is one of the most promising candidates for energy storage applications developed since the 1980s. However, the seal between the alpha-alumina and beta-alumina in the Na/S battery presents a challenge. ... Shufeng Song, Zhaoyin Wen, Yu Liu, Jiu Lin, Xiaogang Xu & Qunxi Zhang. Authors. Shufeng Song. View author ...

DOI: 10.1016/J.JNONCRYSOL.2013.05.010 Corpus ID: 97648295; Development and characterizations of

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Bi2O3-containing glass-ceramic sealants for sodium sulfur battery @article{Song2013DevelopmentAC, title={Development and characterizations of Bi2O3-containing glass-ceramic sealants for sodium sulfur battery}, author={Shufeng Song and ...

This paper presents the research and development of v?-Al 2 O 3 ceramic electrolytes for sodium sulfur battery applications in the Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS). The process to prepare large size v?-Al 2 O 3 ceramic tubes is described. Composite electrolytes with ZrO 2 as second phase additives are introduced. The strengthening and ...

HU Yingying, WEN Zhaoyin, RUI Kun, WU Xiangwei CAS Key Laboratory of Materials for Energy Conversion,Shanghai Institute of Ceramics,Chinese Academy of Sciences,Shanghai 200050,China; Received: ... Key words: energy storage, sodium-sulfur battery, sodium-nickel chloride battery, sodium-air battery. ?????: ...

The sodium sulfur (Na/S) battery is one of the most promising candidates for energy storage applications developed since the 1980s. However, the seal between the alpha-alumina and...

Zhaoyin Wen"s 9 research works with 394 citations and 854 reads, including: Long-Lifespan Lithium Metal Batteries Enabled by a Hybrid Artificial Solid Electrolyte Interface Layer

Progress and prospect of engineering research on energy storage sodium sulfur battery--Material and structure design for improving battery safety: Yingying HU, Xiangwei WU, Zhaoyin WEN ?2 ?????????? ...

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Reducing the operating temperature of molten sodium-sulfur batteries (~350 °C) is critical to create safe and cost-effective devices for large-scale energy storage. By raising the surface treatment temperature with lead acetate trihydrate, we can significantly improve sodium wettability on ß"-Al2O3 solid electrolyte at a low temperature of 120 °C, previously unattained.

Self-Repairing Function of Ni3S2 Layer on Ni Particles in the Na/NiCl2 Cells with the Addition of Sulfur in the Catholyte, ACS Applied Mterials & INterfaces, 2017, ? 11 ?? Enhanced cycle pe rformance of a Na/NiCl2 battery based on Ni ...

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