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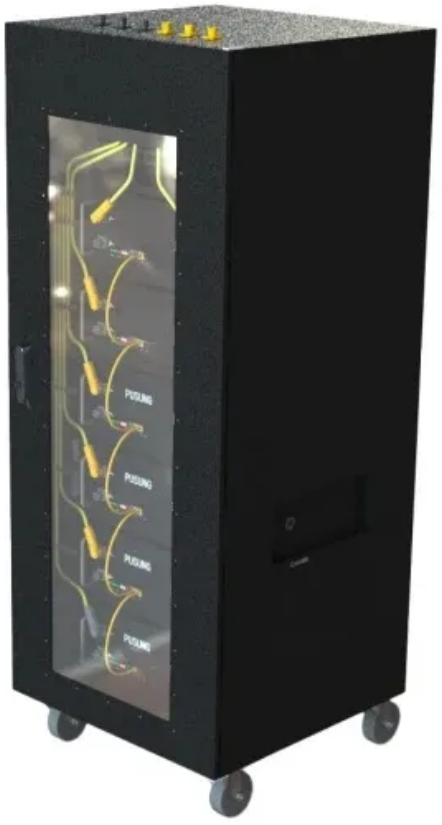
Protective layer of new energy battery cabinet



Overview

Are lithium metal negative electrodes stable during battery cycling?

Stable lithium metal negative electrodes are desirable to produce high-energy batteries. However, when practical testing conditions are applied, lithium metal is unstable during battery cycling. Here, we propose poly (2-hydroxyethyl acrylate-co-sodium benzenesulfonate) (PHS) as negative electrode protective layer.

Can lithium metal electrodes be used to produce high-energy batteries?

Stable lithium metal electrodes are needed to produce high-energy batteries. Here, authors reported poly (2-hydroxyethyl acrylate-co-sodium benzenesulfonate) as a lithium metal protective layer and the production of a 490 Wh/kg class Li | |LiNi0.83Co0.11Mn0.06O2 pouch cell.

Does the NLI protective layer suppress lithium dendrite growth?

The results show that the NLI protective layer can not only suppress lithium dendrite growth through its robust-flexible physical properties, but also decrease the shuttle effect of lithium polysulfide, demonstrating its excellent industrial applications in high-energy Li-S batteries. 3. Conclusion.

How can a high voltage forced electrolysis stabilize a lithium metal battery?

The uncontrolled dendrite growth and electrolyte consumption in lithium metal batteries result from a heterogeneous and unstable solid electrolyte interphase (SEI). Here, a high-voltage forced electrolysis strategy is proposed to stabilize the lithium metal via electrodepositing a spherical protective layer.

How a lithium anode is used in high energy-density batteries?

Conclusion In summary, lithium anode with robust-flexible artificial solid electrolyte interface made of soft Nafion matrix and rigid LiCl salt provides smooth deposition behavior, dendrite-free morphology and longer lifetime

when used in high-energy-density batteries.

Can we produce high-specific-energy Li batteries under realistic conditions?

Nevertheless, few can meet the satisfaction in pouch cells under practical conditions for high-specific-energy LMBs above 400 Wh/kg. Therefore, the rational design of artificial protective layers for stable high-areal-capacity lithium metal anode under realistic conditions is needed to produce high-specific-energy Li batteries.

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