

Stripping light energy storage

Is stripping a lithium battery a good idea?

In contrast, there have been limited studies on the stripping mechanisms of lithium, even though it is as important as lithium plating for improving the performance of lithium metal batteries , , , , , .

Why is lithium stripping important?

Interface-preferred asymmetric stripping mode often causes dead lithium formation. Solid-electrolyte interphase easily floats in electrolyte after lithium stripping. An understanding of lithium stripping is as important as that of lithium plating to achieve significant advances in using lithium metal anodes for high-energy rechargeable batteries.

How does lithium metal stripping work?

Lithium deposits are stripped sporadically. Lithium metal stripping can be described by one of three modes. Interface-preferred asymmetric stripping mode often causes dead lithium formation. Solid-electrolyte interphase easily floats in electrolyte after lithium stripping.

What happens to Li metal during stripping?

Li metal is a conversion-pattern anode and Li atoms, Li ions, and electrons participate in the electrochemical reaction (Equation 4). During stripping, Li metal is electrochemically oxidized to Li ions, which will get away from the anodes and then migrate through the SEI to bulk electrolyte.

What are the disadvantages of lithium stripping?

It shows a drawback of tiny lithium deposits (e.g. nanogranules) with small contact areas to the electrode, which leads to higher chance of losing the electrical connection during their stripping, resulting in the dead lithium formation.

Does a good SEI form during lithium stripping?

This indicates that the collapsed SEI layers (mostly LiF in this case) drift away in the electrolyte during lithium stripping. These results suggest that "good SEI" formed during the prior lithium plating step will be hardly beneficial to the next cycle unless it is tightly fastened by other supporting materials.

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