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Title: Can cylindrical lithium batteries collide

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Failure mechanisms of batteries are revealed upon multi-physical responses and cross-scale morphologies. Component-level failure behaviors are presented employing the ...

In this paper, a detailed model of the cylindrical lithium-ion battery is established, which not only establishes the anode, cathode, separator, winding, and battery casing but also ...

By changing the state of charge (SOC) of the battery, impactor types, and impact energy, the force-electric responses of a LIB under multiple impacts were explored. Macro- ...

Dynamic responses and failure of cylindrical lithium-ion batteries subjected to different impact loadings were revealed.

This study systematically investigated the structural damage and electrochemical performance changes in 18650 cylindrical lithium-ion batteries under multiple impacts through ...

Our study demonstrates that higher impact energy results in increased structural stiffness, maximum temperature, and maximum voltage drop. Furthermore, heightened impact energy ...

The composition and volume of gases released from Li-ion cells and batteries may vary with cell chemistry. Factors including the electrolyte composition, state of charge (SOC), capacity, and ...

By changing the state of charge (SOC) of the battery, impactor types, and impact energy, the force-electric responses of a LIB under ...

Over the years, advancements in materials science, manufacturing techniques, and electrode designs have propelled cylindrical lithium-ion batteries to the forefront of energy ...

To meet the requirements of crashworthiness design of electric vehicle power battery packs, the failure mechanism of lithium-ion batteries was studied under different mechanical abuse ...

Engineering problems, such as fire and explosion caused by mechanical damage, have restricted the further development of lithium-ion batteries (LIBs). The paper aims to ...

Over the years, advancements in materials science, manufacturing techniques, and electrode designs have propelled ...

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