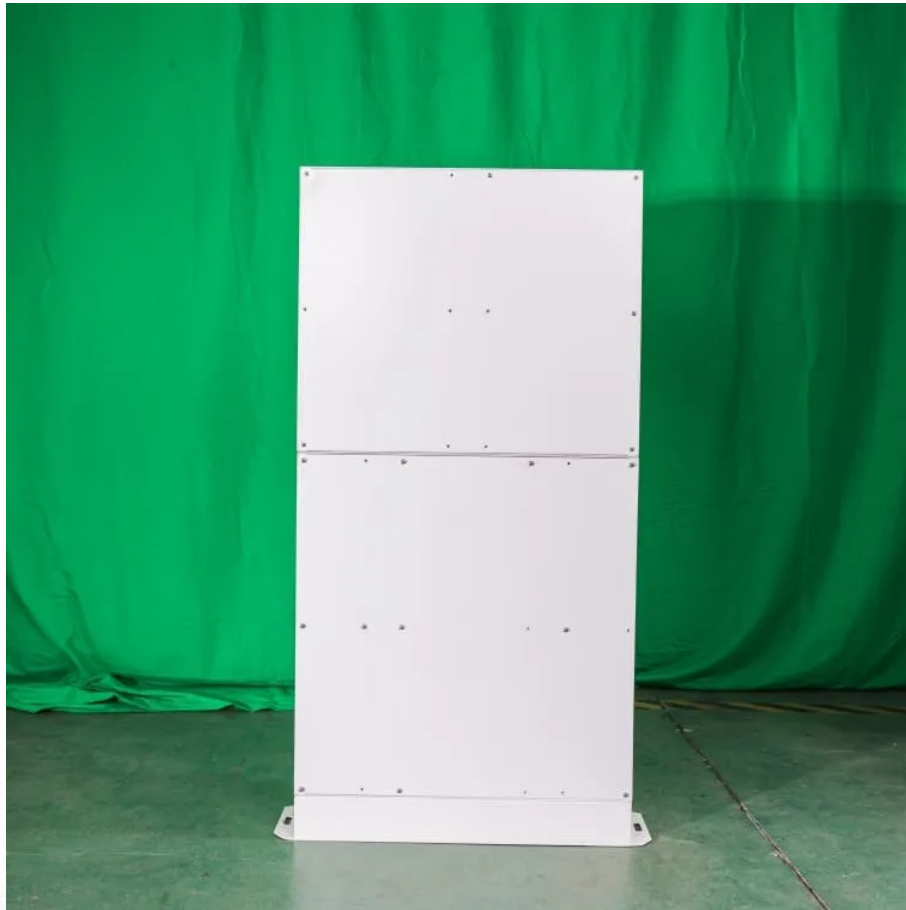


# **Solar container lithium battery cylindrical model**





## Overview

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The safety design of systems using lithium-ion batteries (LIBs) as power sources, such as electric vehicles, cell phones, and laptops, is difficult due to the strong multiphysical coupling effects among mechanics.

What is the internal structure of a cylindrical battery cell?

By disassembling the battery cell, one may clearly understand the internal structure of the cylindrical battery (Fig. 1). Target 18650 cylindrical LIB is composed of battery casing, jellyroll, winding, and other gaskets, whereas the jellyroll is rolled based on a winding in a separator-cathode-separator-anode sequence (Fig. 1a).

Can a cylindrical battery cell predict mechanical behavior under radial compression?

5. Conclusion A detailed model of the 18650 cylindrical battery cell that can well predict the mechanical behaviors of the cell under radial compression, indentation, bending, and axial compression is established in this paper. The deformation modes of cells under these loading conditions can be well captured.

What are lithium ion batteries?

1. Introduction Lithium-ion batteries (LIBs) are widely used in portable electronic equipment, electrical vehicles, and even aircrafts owing to the environmentally sustainable needs and fast breakthroughs in energy-storage technology.

Which electric vehicles use cylindrical cells?

Tesla particularly uses Cylindrical cells in their Electric Vehicles. As per recent announcement Tesla is moving to 4680 from 21700 and the older 18650. Rivian and Lucid Motors are also using cylindrical cells 21700 in their vehicle models (R1T, R1S and AIR Dream, Air GT respectively).



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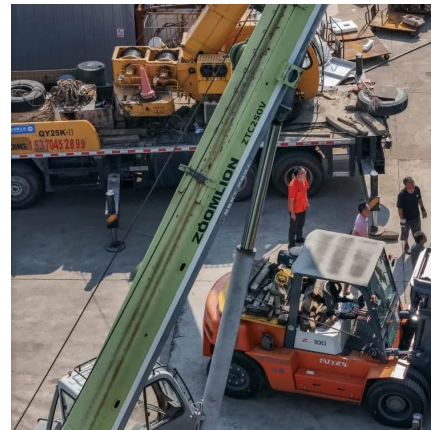
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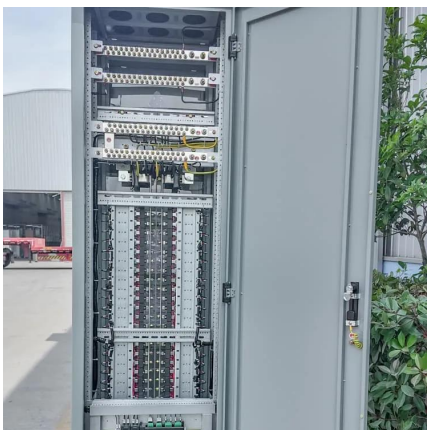
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