



WALMER ENERGY

# Reduce the structure of solar container lithium battery pack





## Overview

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Nowadays, battery design must be considered a multi-disciplinary activity focused on product sustainability in terms of environmental impacts and cost. The paper reviews the design tools and method.

### What is a soft-pack lithium-ion battery?

Soft-pack lithium-ion batteries have become a popular power source for electronics, electric vehicles, and energy storage systems. Thanks to their lightweight, flexible shape and high energy density, they are gaining ground over traditional cylindrical and prismatic battery types.

### How to design a soft-pack battery?

Designing soft-pack batteries isn't easy. Here are some of the main challenges: Since the pouch is soft and thin, it doesn't offer much physical protection. Any sharp object or pressure can damage the battery. The external battery housing or module design must take on this role. The heat sealing process must be perfect.

### How to design Li-ion battery packs?

As discussed, the designers of Li-ion battery packs should use a combination of different tools. These tools could be integrated into a common platform. The lack of an integrated design platform is evident in the literature. Integrating numerical tools, data-driven methods, and life cycle analysis could be a solution.

### How can battery packaging design improve battery safety?

A robust and strategic battery packaging design should also address these issues, including thermal runaway, vibration isolation, and crash safety at the cell and pack level. Therefore, battery safety needs to be evaluated using a multi-disciplinary approach.



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