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Title: Solar container battery container refrigeration principle

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## What is a container energy storage system?

Containerized energy storage systems play an important role in the transmission, distribution and utilization of energy such as thermal, wind and solar power [3, 4]. Lithium batteries are widely used in container energy storage systems because of their high energy density, long service life and large output power [5, 6].

## How does solar refrigeration work?

The primary objective is to maximize the cooling effect while efficiently utilizing the available solar energy. We discuss the design and construction of a solar refrigeration prototype system. This system includes solar panels to capture and convert sunlight into electrical energy, which is then directed to power the Peltier modules.

### What are the basic principles of solar refrigeration?

The fundamental principles of this technology can be summarized as follows: The Peltier Effect:At the heart of solar refrigeration using the Peltier effect is the Peltier effect itself. This effect is a thermoelectric phenomenon observed in certain semiconductor materials,such as bismuth telluride.

### What is a solar thermal refrigeration system?

A typical solar thermal refrigeration system consists of four basic components - a solar collector array, a thermal storage tank, a thermal refrigeration unit and a heat exchange system to transfer energy between components and the refrigerated space. Selection of the solar array depends upon the temperature needed for refrigeration system.

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