

# Photothermal power generation solar container battery





## Overview

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Can thermoelectric generators convert solar energy into electrical energy?

Thermoelectric generators (TEGs), which harness and convert solar-thermal energy into electrical energy, possess immense potential within the field of photothermal conversion (PTC).

Can a reversible solar photothermal molten salt Li-CO<sub>2</sub> battery be used for solar energy?

Here, by engineering the carbon-free three-dimensional (3D) Cr-N-Ru catalysts on silicon nanopillars (Si NP) cathodes, we report a reversible solar photothermal (SPT) molten salt Li-CO<sub>2</sub> battery where solar energy can be efficiently harvested (over 90 % absorption rate from 300 nm to 2500 nm), concentrated and converted to heat.

What is a photo-thermo-electrochemical cell?

Here we report a photo-thermo-electrochemical cell (PTEC) that utilizes two high-temperature solid oxide-based cells working at different high temperatures for flexible electricity generation and hydrogen production for energy storage.

Can PTC material be used to convert solar energy into electrical energy?

Conclusion In summary, we have proposed a novel strategy to design and construct an STEG device by the use of the high-performance Cu<sub>1.5</sub>Mn<sub>1.5</sub>O<sub>4</sub> spinel-type PTC material to capture and convert solar energy into electrical energy, and subsequently coupling the STEG device and the SC device to achieve electrical energy storage and utilization.



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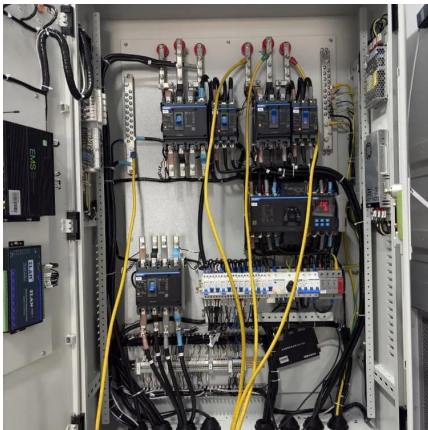
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