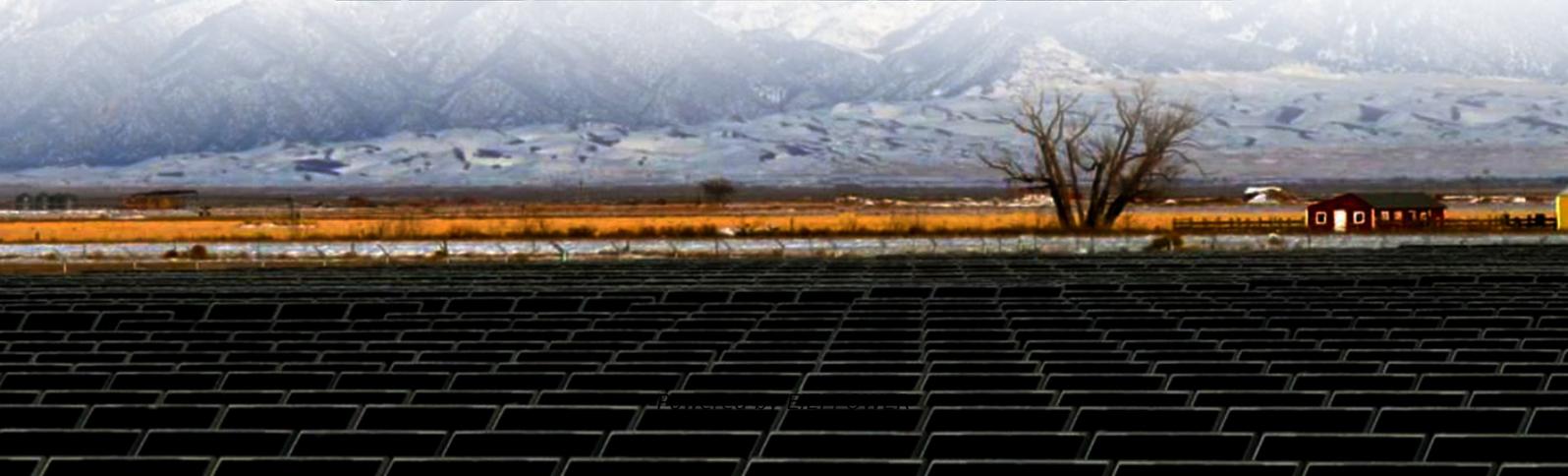


# **Three-phase cooperation for mobile energy storage containers in oil refineries**





## Overview

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The transportation of thermal energy is essential for users who are located far away from heat sources. The networks connecting them achieve the goal in efficient heat delivery and reasonable cost, espe.

What is a phase change container used for?

The present work deals with the review of containers used for the phase change materials for different applications, namely, thermal energy storage, electronic cooling, food and drug transportation and solar water and space heating. The material and geometry of container plays a crucial role in the thermal performance of the system.

Can phase change material modules be used for mobile thermal energy storage?

Modular design of phase change material modules for mobile thermal energy storage. CFD modelling-based design and validation of a 400 MJ-scale novel M–TES device. Closed-loop hot air flow of up to 400 °C utilized achieving a full charge in 10 h. 97 % discharging efficiency with a mean rate and temperature of 10 kW and 195 °C.

What are the different types of thermal energy storage containers?

Guo et al. [ 19] studied different types of containers, namely, shell-and-tube, encapsulated, direct contact and detachable and sorptive type, for mobile thermal energy storage applications. In shell-and-tube type container, heat transfer fluid passes through tube side, whereas shell side contains the PCM.

How CPCMs is used in thermal energy storage?

Such CPCMs use a ceramic skeleton material (CSM) and a thermal conductivity enhancement material (TCEM) to boost the thermal conductivity and structural strength of the PCM. It also offers an additional advantage of reducing the risk of leakage, a prominent challenge in the utilization of PCM for thermal energy storage .



## Three-phase cooperation for mobile energy storage containers in oil

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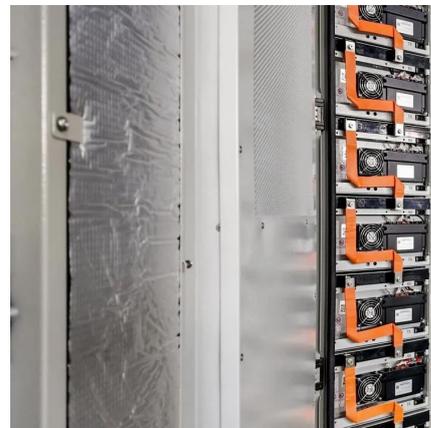


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