Energy storage pot bottom

Overview

Can storage cooking pots be commercially viable?

From this rather limited literature review, it is clear that more work needs to be conducted on the performance enhancement and optimisation of storage cooking pots before they can be commercially viable. Some of the authors have also suggested the use of a numerical model for performance enhancement and optimisation.

How does solar energy transfer to a pot?

In equilibrium, about 79% of the incoming solar flux goes towards heating up the TES. The heat is further transferred to the pot, where convective plumes also appear much later in time. However, the heat transfer to the pot is much smaller, with an average heat-transfer coefficient of 1.6 Wm K compared to 7.5 Wm K for the TES.

Are solar cooking pots efficient?

Moreover, the temperature distribution in the cooker is quasi-uniform. During the charging period, the storage efficiency of the TES is about 29%. With the results in this study, solar cooking pots with TES can be further optimized towards efficiently transmitting the heat form the solar radiation to the food to be cooked.

Does a solar cooking pot have a heat-transfer mechanism?

This paper presents a detailed analysis of the heat-transfer mechanisms in a solar cooking pot with thermal energy storage using computational fluid dynamics (CFD). The vast majority of studies on solar cookers have been experimentally performed using local temperature measurements with thermocouples.

How much energy is stored in a TES?

During this charging period, an amount of about 800 kJ of energy is stored in

the TES, which should be sufficient to cook around 0.5 kg of chicken, chips and tomatoes using 0.1 kg of oil during off-sunshine hours [22]. 3.3. Transient Heat Transfer Phenomena In this section, the transient heat-transfer mechanisms are studied in greater detail.

What is the storage efficiency of a TES cooker?

After two hours of charging, the oil reaches a temperature of 397 K in the TES and 396 K in the cooking pot. Moreover, the temperature distribution in the cooker is quasi-uniform. During the charging period, the storage efficiency of the TES is about 29%.

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Heat-Transfer Mechanisms in a Solar Cooking Pot ...

This paper presents a detailed analysis of the heat-transfer mechanisms in a solar cooking pot with thermal energy storage using computational fluid dynamics (CFD).

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Heat-Transfer Mechanisms in a Solar Cooking Pot with Thermal Energy Storage

This paper presents a detailed analysis of the heat-transfer mechanisms in a solar cooking pot with thermal energy storage using computational fluid dynamics (CFD).

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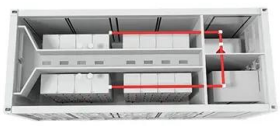
Fig. 4 is the inner pan body schematic bottom view of the described energy storage type pot capable of continuous cooking after outgoing fire of the utility model embodiment.

Energy-saving pot provided with fin at bottom, and manufacturing ...

A production method and technology for energy-saving pots, which are applied to utensils with enlarged heating surfaces and other directions, can solve the problems of complex process and low cost performance, and achieve the effects of large ...



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Energy-saving pot

Since the bottom of the pot is flat, the burning flame walks along a straight line at the bottom of the pot. The radiation heating surface of the bottom is small, so the heat absorption of the pot is small, and the utilization rate of heat is relatively low.

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The utilization ratio of energy is improved by increasing the contact areas of the pot bottom and flames as well as the pot bottom and objects in a pot, thereby achieving the purposes

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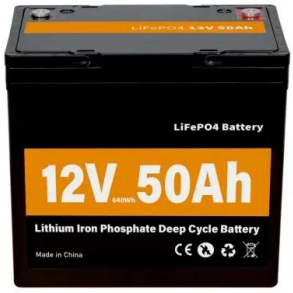
The utility model aims to provide a device for continuing heating the bottom of a pot. The device is composed of a pot body (10), and a porous heat storage sheet (20) which is combined with



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