

The modified steel slag (M-SS) was further used to shape-stabilize eutectic salt (i.e., NaCl-KCl) for high-temperature thermal energy storage ($>500\text{ }^\circ\text{C}$). Phase evolution of ...

In this study, industrial solid waste steel slag was used as supporting material for the first time, and polyethylene glycol (PEG), sodium nitrate (NaNO_3), and sodium sulfate (Na_2SO_4) were ...

This report focused on the processing technology and performance of composite phase change thermal storage materials, which were fabricated by direct impregnation method ...

In order to promote the resource utilization in steel slag and reduce the environmental hazards caused by steel slag, a steel slag-based composite phase change ...

Although the results indicate that the current setup led to rapid cooling, making the modified slag unsuitable for thermal energy storage under exposed conditions, this ...

Thus, the developed solar salt/steel slag composite PCM is not only of interest to the large-scale application of thermal energy storage, but also provide an excellent option for waste recycling ...

In order to improve the utilization of solid waste steel slag as well as to achieve the goals of pollution reduction, carbon reduction, and synergistic efficiency, in this work, a novel ...

This work investigates the thermal performance of a novel high-temperature ($\geq 500\text{ }^\circ\text{C}$) latent heat thermal energy storage (LHTES) device, using modified steel slag/chlorides composite phase ...

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In order to promote the resource utilization in steel slag and reduce the environmental hazards caused by steel slag, a steel slag-based composite phase change material was prepared in ...

Thermo-mechanical stability of supplementary cementitious materials in cement paste to be incorporated in concrete as thermal energy storage material at high temperatures ...

As a by-product of the iron and steel industry, steel slag is rich in catalytically active substances and can therefore be used as a solid catalyst. ...

Steel slag meets the high thermal stability of matrix materials and has a low cost. Suppose steel slag is used as the carrier of phase change materials. In that case, it is of great significance to ...

Abstract This work investigates the thermal performance of a novel high-temperature (≥ 500 °C) latent heat thermal energy storage (LHTES) device, using modified steel slag/chlorides ...

The results indicate that the mass ratio of wet grinding steel slag powder, MgO powder and clay is 6:3:1, the composite heat storage material can have a strong compressive ...

The composite phase change material prepared from fly ash and steel slag as raw materials demonstrated a latent heat of 89 J/g. The composite phase change material exhibited good ...

Enhancing Thermal Energy Storage with Modified Steel Slag: A Sustainable Solution Significance The search for effective sustainable energy solutions has gained increasing momentum as the ...

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Development of thermal storage material utilizing recycled solid wastes resources can enhance the economic and environmental benefits of thermal energy storage systems. This report ...

Liu, Preparation and characterization of steel slag-based low, medium, and high-temperature composite phase change energy storage materials [J], J. Energy Storage, No 57

Abstract It is of practical importance to develop form stable composite phase change materials (FSPCMs) for high temperature thermal energy storage. Carbonates are ...

Semantic Scholar extracted view of "Innovative strategies for thermal storage of steel slag-modified porous ceramic-based low-temperature composite phase change materials" by Yi Lu ...

As a by-product of the iron and steel industry, steel slag is rich in catalytically active substances and can therefore be used as a solid catalyst. Many studies have shown that ...

Using steel slag to prepare high-temperature (≥ 500 °C) PCMs was an effective way to achieve its

high value-added utilization as a potential heat storage medium in a variety of applications, ...

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In order to tackle these problems, we impregnated steel slag with acetic acid and doped Mn to create a novel CaO-based energy storage material. Thermogravimetric ...

Abstract In order to promote the resource utilization in steel slag and reduce the environmental hazards caused by steel slag, a steel slag-based composite phase change material was ...

Modification of steel slag to prepare chlorides based composite phase change materials with shape stability for high-temperature thermal energy storage

To mitigate the growing energy consumption of the construction industry, researchers have developed thermal energy storage technology using phase-change materials ...

Request PDF | Synthesis and characterization of form-stable carbonate/steel slag composite materials for thermal energy storage | It is of practical importance to develop form ...

Abstract:Using steel slag to prepare high-temperature (>500 (degrees)C) PCMs was an effective way to achieve its high valueadded utilization as a potential heat storage medium in a variety of ...

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