Xuelai Zhang; Jun Ji; Under the background of low carbon, phase change energy storage technology has been developed rapidly, which is widely used in solar energy utilization, industrial heat ...

Author links open overlay panel Weisan Hua, Hongfei Yan, Xuelai Zhang, Xidong Xu, Liyu Zhang, Yao Shi. Show more. Add to Mendeley. ... In order to achieve efficient and continuous utilization, energy storage technology is needed to adjust to achieve the mismatch between the supply and demand in time and space and efficient recovery of low-grade ...

Research projects on new electrical energy storage (EES) systems are underway because of the role of EES in balancing the electric grid and smoothing out the instability of renewable energy. In this paper, a novel compressed carbon dioxide energy storage with low-temperature thermal storage was proposed. Liquid CO2 storage was employed to increase the storage density of ...

In this paper, we present an optimization planning method for enhancing power quality in integrated energy systems in large-building microgrids by adjusting the sizing and ...

The experimental results show that the nanocomposite phase change material can effectively maintain cold temperatures in the box for 87 hours, and the viscosity and pH of ...

@article{Zhao2020ResearchPO, title={Research progress of phase change cold storage materials used in cold chain transportation and their different cold storage packaging structures}, author={Yi Zhao and Xuelai Zhang and Xiaofeng Xu and Shihua Zhang}, journal={Journal of Molecular Liquids}, year={2020}, volume={319}, pages={114360}, url={https ...

The study aimed to investigate the application progress of cool storage technology in food cold chain logistics, point out questions that needed to be solved, and provide reference for its further development. This paper summarized the cold storage technology used in the hold-over plate refrigerated vehicles, cold storage insulation transport boxes, packaging, and cold storage, ...

Zhang Xuelai"s 9 research works with 208 citations and 712 reads, including: Simulation and experimental investigation of a multi-temperature insulation box with phase change...

DOI: 10.1016/j.est.2022.105958 Corpus ID: 253377232; Research progress of cold chain transport technology for storage fruits and vegetables @article{Qi2022ResearchPO, title={Research progress of cold chain transport technology for storage fruits and vegetables}, author={Tin Qi and Jun Ji and Xuelai Zhang and Lu Liu and Xinhong Xu and Kunlin Ma and Yintao Gao}, ...

DOI: 10.1016/j.est.2020.101455 Corpus ID: 219515183; Development of composite phase change cold storage material and its application in vaccine cold storage equipment @article{Zhao2020DevelopmentOC,

title={Development of composite phase change cold storage material and its application in vaccine cold storage equipment}, author={Yi Zhao and Xuelai ...

Xuelai Zhang Institute of Cool Storage Technology, Shanghai Maritime University, Shanghai, China. Correspondence. Xuelai Zhang, Institute of Cool Storage Technology, Shanghai Maritime University, Shanghai 201306, China. Email: Search for more papers by this author

Cold thermal energy storage (CTES) is a technology with high potential for different thermal applications. CTES may be the most suitable method and method to correct the gap between energy demand and supply. Although many studies cover the application of cold energy storage technology and the introduction of cold storage materials, compared with other ...

ZHANG Xuelai, WANG Xuzhe, WANG Jifen, XU Xiaofeng, HUA Weisan, FANG Manting. Molecular dynamics simulation of phase transformation process of n -tetradecane [J]. Energy ...

Xuelai Zhang, Shanghai Maritime University, Shanghai, 1550 Lingang Avenue, Pudong New Area, 201306 Shanghai, China. ... 3.42 W/m·K. Composite phase change material shows good thermal stability and provides strong support for ...

At present, there are more than 40 kinds of dynamic ice-making technology. According to the different cooling methods, the ice slurry preparation methods are divided into two categories: One is wall indirect cooling, and the other is direct cooling [15]. ... Zhang Xuelai, Wang Zhangfei, Zheng Qinyue, C. Yue., H. Xingchao, G. Wei, Preparation of ...

Phase change materials (PCMs) are widely used in solar energy utilization, industrial waste heat recovery and building temperature regulation. However, there have been ...

Phase change energy storage technology is an important technology to solve the contradiction between energy supply and demand and improve energy efficiency. In the fields of fruit and vegetable ...

Xuelai Zhang; Jun Ji; ... Thermal energy storage systems, also known as thermal batteries integrated with phase change materials, have gained significant attention in recent years as a promising ...

Besides, the causes of PCH were interpretated from the respective of energy storage, temperature delay, thermal resistance of PCMs, crystallinity, and interfacial free energy. The results showed that PCH phenomenon is controllable, thereby improving the energy utilization efficiency of PCMs.

Energy Technology is an applied energy journal covering technical aspects of energy process engineering, ... Xuelai Zhang ... Institute of Cool Thermal Storage Technology, Shanghai Maritime University, Shanghai, 201306 China. Search for more papers by this author. Xiangwei Lin, Xiangwei Lin.

Phase change materials (PCMs) have become a research hotspot in the field of energy storage due to their high energy storage density. Fruits and vegetables have the characteristics of perishability, temperature sensitivity, and cross-regional transportation, which makes their transportation and distribution technical requirements higher.

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On the basis of low carbon city concept, combined with international energy situation, energy supply system, energy storage technology and economic analysis on the energy center of Chen...

Seasonal thermal energy storage (STES) is a highly effective energy-use system that uses thermal storage media to store and utilize thermal energy over cycles, which is crucial for accomplishing low and zero carbon emissions. Sensible heat storage, latent heat storage, and thermochemical heat storage are the three most prevalent types of seasonal thermal energy ...

Pollution-free electric vehicles (EVs) are a reliable option to reduce carbon emissions and dependence on fossil fuels.The lithium-ion battery has strict requirements for operating temperature, so the battery thermal management systems (BTMS) play an important role. Liquid cooling is typically used in today"s commercial vehicles, which can effectively ...

In order to alleviate the contradiction between the growing energy demand and the limited fossil energy, intensifying research and development of application technologies that utilize renewable energy is necessary. Energy storage technology using PCMs is a frontier research field with great application prospect. As a kind of phase change energy storage materials, organic PCMs ...

Cool storage technology means that when the night power load is low, the cooling unit is operated to generate cooling capacity stored in the cold storage medium, and then the cooling capacity is released during the peak load period to meet various cooling load demands, shifting peaks and filling valleys, and saving electricity costs [].At present, cold storage technology has been ...

Xuelai Zhang, Institute of Cooling Thermal Storage Technology, Shanghai Maritime University, Shanghai 201306, China. Email: xlzhang@shmtu .cn Search for more papers by this author

Author links open overlay panel Bo Yang, Xuelai Zhang, Jun Ji, Yize Zhao, Miaomiao Jiang. Show more. Add to Mendeley. ... Phase change energy storage technology, as an efficient means of energy storage, has an extremely high energy storage density, and can store or release thermal energy under isothermal conditions, which is an effective means ...

Energy Technology is an applied energy journal covering technical aspects of energy process engineering,

including generation, conversion, storage, & distribution. ... storage, & distribution. This article summarizes measures to enhance the solar phase change thermal energy storage (TES), starting from two key points in solar phase change TES ...

At present, the main power batteries are nickel-hydrogen battery, fuel battery, and lithium-ion battery. In practical applications, lithium-ion batteries have the advantages of high energy density [16], high power factor [17, 18], long cycle life [19], low self-discharge rate [20], good stability [21], no memory effect [21, 22] and so on, it is currently the power battery pack ...

International Journal of Energy Research. Volume 42, Issue 14 p. 4429-4438. ... Xuelai Zhang, Institute of Cool Storage Technology, Shanghai Maritime University, Shanghai 201306, China. Email: ... Xuelai Zhang, Institute of Cool Storage Technology, Shanghai Maritime University, Shanghai 201306, China.

DOI: 10.1016/j.est.2019.101155 Corpus ID: 213354546; Research progress on power battery cooling technology for electric vehicles @article{Lu2020ResearchPO, title={Research progress on power battery cooling technology for electric vehicles}, author={Mengyao Lu and Xuelai Zhang and Jun Ji and Xiaofeng Xu and Yongyichuan Zhang}, journal={Journal of energy storage}, ...

Abstract Phase change energy storage technology is an important technology to solve the contradiction between energy supply and demand and improve energy efficiency. In the fields of fruit and vegetable preservation, cold chain logistics, chemical industry, medicine and other fields, low-temperature phase change materials below 0 °C have great application space, ...