

# Jiaotong University Solar Thermal Storage





## Overview

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Is latent thermal energy storage a viable alternative to solar energy?

Although solar energy is a clean and abundant resource, it has an unstable nature. It is demonstrated that latent thermal energy storage (LTES) systems have been an excellent way to utilize solar energy fully and widely. However, LTES has the problem of insufficient thermal conductivity.

Who is Jiao Tong?

He received his Ph. D. degree in Materials Engineering from Rensselaer Polytechnic Institute in 2012. He worked as a post-doctoral materials research scientist in Dow Corning Corporation for 1 year. He joined Shanghai Jiao Tong University since 2014 as an assistant professor and was promoted to professor in 2023. Research Interests.

Can optical absorbers be tuned for accelerated solar-thermal energy storage?

Dynamic tuning of optical absorbers for accelerated solar-thermal energy storage, Nature Communications 2017, 8 (1), 1478. Research Projects National Natural Science Foundation of China



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### Yanping Yuan's research works , Southwest Jiaotong University, ...

Yanping Yuan's 40 research works with 391 citations and 4,044 reads, including: Self-sensed, self-adapted and self-powered piezoelectric generator architecture by synchronous circuits of

### School of Mechanical Engineering, Shanghai Jiao Tong University ...

09/2014 - 03/2020 Ph.D., Shanghai Jiao Tong University 09/2010 - 06/2014 B.S., University of Science & Technology Beijing on combined system of the photo-induced molecular ...



**1mwh** (500kw/1mw)

AIR COOLING  
ENERGY STORAGE CONTAINER



### Project 4: Thermal Storage and Energy conservation

There are three categories of thermal energy-storage systems: sensible heat storage, latent heat storage, and chemical heat storage (CHS). seasonal heat storage because of the possibility ...

### School of Mechanical Engineering, Shanghai Jiao Tong University ...

1992.12-1994.12: Associate Professor, Department of Power Mechanical Engineering, Shanghai Jiao Tong University 1994.12-: Professor, Department of Power Mechanical Engineering, ...



**Xinyuan TANG , Xi'an , PhD Student , Xi'an Jiaotong University, ...**

Xi'an Jiaotong University Energy storage / Solar energy / Thermochemical; September 2015 - June 2019 the solar-thermal-chemical integrated design for a methane dry reforming reactor ...

**Y.B. TAO , Xi'an Jiaotong University, Xi'an , XJTU**

Based on enthalpy method, numerical studies were performed for high temperature molten salt phase change thermal energy storage (PCTES) unit used in a dish solar thermal power ...



**Zhang KEZHEN , Bachelor of Philosophy , Xi'an Jiaotong University...**

Pumped-thermal electricity storage (PTES), with the advantages of reduced geographical constraints, low capital costs, long lifetimes and flexible power ratings, is a promising large ...





**Junjie YAN , Xi'an Jiaotong University, Xi'an , XJTU**

Pumped-thermal electricity storage (PTES), with the advantages of reduced geographical constraints, low capital costs, long lifetimes and flexible power ratings, is a promising large ...



### **Experimental Study on Improving Thermal Environment in Solar ...**

Chinese solar greenhouse (CSG) is an energy-saving production building that is used to grow off-season crops. The north wall of CSG plays an important part to maintain the ...

### **Experimental Study on Improving Thermal Environment in Solar**

2.1 The Active-Passive Phase Change Thermal Storage Wall System. As shown in Fig. 1, an active-passive phase change thermal storage wall system has been ...



### **Zhiguo QU , Professor (Full) , PhD , Xi'an Jiaotong ...**

Xi'an Jiaotong University Numerical Simulation of Enhancing the Solar-Thermal Conversion and Storage Performance for Expanded Perlite/Paraffin Wax Composites by Introducing Expanded Graphite



**Chao ZENG , Assistant professor , Doctor of ...**

The heat storage type solar air collectors that only release heat at night have a low thermal efficiency. In this study, an experiment is conducted on a double-glazed solar air-phase change



**Tao MA , Professor (Associate) , PhD , Shanghai Jiao Tong University**

Shanghai Jiao Tong University. School of Mechanical Engineering Efficient energy generation and thermal storage in a photovoltaic thermal system partially covered by solar cells and ...

**Carbonized-Wood Based Composite Phase Change Materials ...**

The integration of photo-thermal conversion and thermal energy storage is an efficient way to improve the solar energy utilization. Phase change material (PCM) with ...



Test certification  
CE FC



**School of Mechanical Engineering, Shanghai Jiao Tong University ...**

A novel solid-gas thermochemical multilevel sorption thermal battery for cascaded solar thermal energy storage. Applied Energy 161 (2016) 1-10 [24] T.X. Li, R.Z. Wang, L.W. Wang, J.K. ...



**School of Mechanical Engineering,  
Shanghai Jiao Tong University ...**

2002 -2005, Solar energy Engineering Shanghai Jiao Tong University, Doctor 1997 -2000, Heating Ventilation and Air-conditioning Engineering Taiyuan University of Technology, Master ...



**School of Mechanical Engineering,  
Shanghai Jiao Tong University**

An innovative method and equipment for the seasonal storage of solar thermal energy using solid-gas thermochemical sorption technology. (Patent Application No.201210163125.7, Under

**Bingchen ZHAO , Research Assistant , Ph.D  
, Shanghai Jiao Tong**

Thermal energy storage (TES) in building heat and waste heat recovery. Bingchen Zhao. Shanghai Jiao Tong University In support of more efficient utilization of solar and nuclear ...



**Jiaxing XU , Postdoctor , Doctor of  
Engineering**

Shanghai Jiao Tong University Sorption thermal battery is an effective thermal energy storage technology for solar energy utilization and waste heat recovery. However, the low thermal



**Karem ELFEKY , Researcher , PhD , Xi'an Jiaotong University, ...**

Karem Elfeky currently works at the School of Energy and Power Engineering, Xi'an Jiaotong University. Karem does research on Heat Transfer Enhancement, Thermal Energy Storage, ...



**Tao MA , Professor (Associate) , PhD , Shanghai Jiao ...**

Efficient energy generation and thermal storage in a photovoltaic thermal system partially covered by solar cells and integrated with organic phase change materials

**Nan ZHANG , Doctor of Engineering , Southwest Jiaotong University**

The heat storage type solar air collectors that only release heat at night have a low thermal efficiency. In this study, an experiment is conducted on a double-glazed solar air-phase ...



**Xiaohu YANG , Professor (Full) , Ph.D , Xi'an Jiaotong ...**

Latent heat storage technology plays an important role in the effective utilization of clean energy such as solar energy in building heating, but the low thermal conductivity of heat



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