Journal of fluid machinery and energy storage

How can a gravity hydraulic energy storage system be improved?
For a gravity hydraulic energy storage system,the energy storage density is low and can be improved using CAES technology. As shown in Fig. 25,Berrada et al. introduced CAES equipment into a gravity hydraulic energy storage system and proposed a GCAHPTS system.

Is liquid air energy storage a promising thermo-mechanical storage solution?
Conclusions and outlook Given the high energy density,layout flexibility and absence of geographical constraints,liquid air energy storage (LAES) is a very promisingthermo-mechanical storage solution,currently on the verge of industrial deployment.

What is liquid air energy storage?
Liquid air energy storage (LAES) process. LAES is a thermo-mechanical storage solutioncurrently near to market and ready to be deployed in real operational environments [12,13].

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The International Journal of Fluid Machinery and Systems (IJFMS) is an open access journal and was established under the cooperation of Korean Society for Fluid Machinery (KSFM), Chinese Society of Engineering Thermophysics (CSET), Turbomachinery Society of Japan (TSJ) and IAHR Section on Hydraulic Machinery and Systems (IAHR) to serve the engineering ...

?Associate Professor of Fluid Machinery and Energy Systems University of Rome Tor Vergata? - ??Cited by 3,077?? - ?Mechanical Engineering? - ?Lattice Boltzmann Method? - ?Multi-scale Modeling? - ?Fluid Machinery and Energy Systems? - ?Fluid Dynamics? ... (compressed air energy storage) system for stand-alone ...

Frontiers in Energy - Call for Papers: "Special Issue on Thermo-mechanical Energy Storage Technologies" Frontiers in Energy, a journal of transactions of the Chinese Academy of Engineering (CAE), is a peer-reviewed international journal launched by Higher Education Press, CAE, and Shanghai Jiao Tong University, co-published by Higher Education Press and Springer.

Thermal energy storage (TES) is a technology that stocks thermal energy by heating or cooling a storage medium so that the stored energy can be used at a later time for heating and cooling applications and power generation. TES systems are used particularly in buildings and in industrial processes. This paper is focused

on TES technologies that provide a way of ...

A novel water cycle compressed air energy storage system (WC-CAES) is proposed to improve the energy storage density (ESD) and round trip efficiency (RTE) of A-CAES. The new system decreases electricity consumption by recovering and reusing the hydraulic pressure of water. The thermodynamic characteristics of WC-CAES are evaluated by energy ...

2.1 Fundamental principle. CAES is an energy storage technology based on gas turbine technology, which uses electricity to compress air and stores the high-pressure air in storage reservoir by means of underground salt cavern, underground mine, expired wells, or gas chamber during energy storage period, and releases the compressed air to drive turbine to ...

the KSFM Journal of Fluid Machinery covers various engineering aspects of fluid machinery including design, manufacturing, operation and new application as listed below. * pump and hydraulic turbines; fan and ventilation systems; compressor; gas and steam turbines; duct and pipe flows; rotor dynamics; ship and ocean energy; waste management ...

The Journal of Energy Storage focusses on all aspects of energy storage, in particular systems integration, electric grid integration, modelling and analysis, novel energy storage technologies, sizing and management strategies, business models for operation of storage systems and energy storage developments worldwide.

Fluid machinery refers to fluid as the working medium for energy conversion machinery, including turbines, pumps, and compressors. Due to the wide application range, diverse applicable environment, and complex structure of fluid machinery, it is difficult to meet the changeable operating conditions through a fixed structure.

Editors select a small number of articles recently published in the journal that they believe will be particularly interesting to readers, or important in the respective research area. ... Cavitation and multi-phase flow of fluid machinery; New energy systems, simulation, and optimization; Other aspects of fluid machinery. Prof. Dr. Chuan Wang ...

To meet the requirements of power grids, the pumped storage unit (PT) has to operate at transient conditions. As the unstable fluid is one root cause of unit instability in pumped storage plant, accurate solutions to PT internal fluid should be highlighted. This review of numerical solving methods for the internal fluid of PT consists of three ...

Pumped-storage units are considered as ideal large-scale energy storage elements for HGSs due to their fast response and long life. The purpose of this study is to increase the system reliability and water power utilization rate and maximize the economic benefits of a cascade hydro-PV-pumped storage (CH-PV-PS) generation system.

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The purpose of Energy Storage Technologies (EST) is to manage energy by minimizing energy waste and improving energy efficiency in various processes [141]. During this process, secondary energy forms such as heat and electricity are stored, leading to a reduction in the consumption of primary energy forms like fossil fuels [142].

Journal of Energy Storage. Volume 53, September 2022, 105226. Review article. ... (ARES), represents the technology whose energy storage equipment consists of multiple tracks with a 5 MW storage capacity. Due to its scalability, the energy storage capacity can be adjusted between several MWh and dozens of GWh by changing the mine cars number, ...

Read the latest articles of Journal of Energy Storage at ScienceDirect , Elsevier"s leading platform of peer-reviewed scholarly literature. Skip to main content. ADVERTISEMENT. Journals & Books; Help ... select article Numerical approach to analyze fluid flow in a type C tank for liquefied hydrogen carrier (part 2: Thermal flow) https ...

Reference journals for the topic are found to be Applied Energy and Energy, which jointly cover about half of the scientific publications reviewed in this article; other relevant journal titles are Applied Thermal Engineering, Energy Conversion and Management (5 relevant publications each), the Journal of Energy Storage (3 publications) and the ...

International Journal of Fluid Machinery and Systems, 2016, 9(1): 75-84. Article Google Scholar ... Journal of Energy Storage, 2022, 53: 105079. Article Google Scholar Download references. Author information. Authors and Affiliations. College of Water Resources and Civil Engineering, China Agricultural University, Beijing, 100083, China ...

Energy Equipment and Systems (energyequipsys) is an internationally recognized multi-disciplinary scientific and engineering journal with a focus on the broad field of heat and power generating as well as heat and power-consuming equipment and systems.Energyequipsys is published quarterly in March, June, September and December of each year.. Energy ...

Improving the efficiency of fluid machinery is an eternal topic, and the development of computational fluid dynamics (CFD) technology provides an opportunity to achieve optimal design in limited time. A multi-objective design process based on CFD and an intelligent optimization method is proposed in this study to improve the energy transfer efficiency, using the ...

Energy Equipment and Systems (energyequipsys) is an internationally recognized multi-disciplinary scientific and engineering journal with a focus on the broad field of power generation systems.Energyequipsys is published quarterly in March, June, September and December of each year. Energy Equipment and Systems belongs to the University of Tehran, which is a ...

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Energy storage systems are an important component of the energy transition, which is currently planned and launched in most of the developed and developing countries. The article outlines development of an electric energy storage system for drilling based on electric-chemical generators. Description and generalization are given for the main objectives for this ...

Article from the Special Issue on Innovative materials in energy storage systems; Edited by Ana Inés Fernández and Camila Barreneche; Article from the Special Issue on Modern Energy Storage Technologies for Decarbonized Power Systems under the background of circular economy with sustainable development; Edited by Ruiming Fang and Ronghui Zhang

Therefore, the development of advanced, efficient rotating fluid machinery can promote the rapid increase of renewable energy sources such as wind power and photovoltaic power by improving the stability of hydro turbines and pumped storage units over wider operating ranges and increasing the efficiencies of fluid machinery through design ...

Keywords: fluid machinery and system, design and optimization, efficiency improvement, unsteady flow, computational fluid dynamics. Citation: Ji L, Agarwal RK, Kan K, Tao R, Yang Y and Presas A (2023) Editorial: Optimal design and efficiency improvement of fluid machinery and systems. Front. Energy Res. 11:1238721. doi: 10.3389/fenrg.2023.1238721

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