

What is gravity energy storage technology?

The most widely used scenario of gravity energy storage technology is wind power generation system, followed by solar power generation system and ocean power generation system. In addition, there are geothermal, hydro-energy, bioenergy and hydrogen generation system.

How many patents are there in gravity energy storage?

The paper data utilized in this research was extracted from the Clarivate Analytics company's WoS Core Collection database (SCI-Expanded). The search strategy was based on the association of keywords related to gravity energy storage. By June 2023, 1166 patents and 82 SCI papers were retrieved.

Does gravity energy storage technology need technological breakthroughs?

The results of paper analysis show that the global output of gravity energy storage technology patents and papers continues to grow steadily, which is at the initial stage of commercialization, still needs technological breakthroughs.

Are gravity energy storage systems the future of energy storage?

Gravity energy storage systems, using weights lifted and lowered by electric winches to store energy, have great potential to deliver valuable energy storage services to enable this transformation.

When was gravity energy storage invented?

The first patent application for gravity energy storage technology was filed by Tah Sun Lin in the USA in 1974, providing a device for harnessing wave energy and storing the energy in the form of potential energy for subsequent use in driving various machines.

Which country is the target market for gravity energy storage technology?

The figure clearly illustrates, China is the most important target market for gravity energy storage technology, accounting for 60% of the total number of the global gravity energy storage technology patents. This is followed by the USA, Japan, Korea and Germany. Fig. 2. The literature number of main countries and regions related to GES technology

The main countries and regions of patents that accepted gravity energy storage technology patents are shown in Fig. 2(a). The figure clearly illustrates, China is the most important ...

2022-03-10 Priority to CN202210240333.6A priority Critical patent/CN114576114A/en ... And the roller is arranged at the top of the derrick and connected with the winding drum. ... 10. A ...

The invention discloses a gravity energy storage system based on multi-object efficient lifting and transferring, which comprises a vertical shaft (1), a roadway (2), an upper weight storage ...

Applications of Gravity Energy Storage Technology. Grid Stabilization: Gravity-based energy storage technology systems can help stabilize the grid by storing excess energy ...

Energy Vault Inc received a granted US patent US 10,683,851 B2 for their energy storage system that stores and releases energy via the stacking of blocks. In particular, the claims of the patent, which define the ...

With the continuous development of renewable energy sources, there is a growing demand for various energy storage technologies for power grids. Gravity energy storage is a kind of physical energy storage with competitive ...

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