

# Energy storage patent background

The invention relates to systems and methods for rapidly and isothermally expanding gas in a cylinder. The cylinder is used in a staged hydraulic-pneumatic energy conversion system and includes a gas chamber (pneumatic side) and a fluid chamber (hydraulic side) and a piston or other mechanism that separates the gas chamber and fluid chamber ...

Justia Patents US Patent Application for ENERGY STORAGE SYSTEM Patent Application (Application #20230116874) ... **BACKGROUND OF THE INVENTION** 1. Field of the Invention. The present disclosure relates to an energy storage system, and more particularly, to an energy storage system including a plurality of battery cells. ...

A compressed fluid energy storage system includes a submersible fluid containment subsystem charged with a compressed working fluid and submerged and ballasted in a body of water, with the fluid containment subsystem having a substantially flat portion closing a domed portion. The system also includes a compressor and an expander disposed to ...

The present invention provides a distributed energy storage system, and applications thereof. In an embodiment, the distributed energy storage system includes power units, wherein each power unit has a multi-cell battery; a battery manager that monitors battery cell voltages and temperatures; and a controller. The controller provides a first control signal that causes the ...

US20160370123A1 US14/898,780 US201414898780A US2016370123A1 US 20160370123 A1 US20160370123 A1 US 20160370123A1 US 201414898780 A US201414898780 A US 201414898780A US 2016370123 A1 US2016370123 A1 US 2016370123A1 Authority US United States Prior art keywords energy storage boiler storage system pump banks Prior art date ...

Justia Patents Wind, Solar, Thermal, Or Fuel-cell Source US Patent for Portable solar power generator with energy storage Patent (Patent # 11,146,206) Portable solar power generator with energy storage . Sep 27, 2019 ... **BACKGROUND.** Solar (photovoltaic) cells convert light (solar or ambient) energy into electricity. Solar cells can be grouped ...

Our large-scale long duration hybrid energy storage systems, both the Optimized Liquid Air Energy Storage System and the Combined Gas and Electric Energy Storage (CEGS) System are based on the recently issued U.S. patent 11,598,261 "Re-Condensing Power Cycle for Fluid Regasification". A European patent application has been filed.

Electricity storage inventions show annual growth of 14% over past decade, joint study by European Patent Office (EPO) and International Energy Agency (IEA) finds. Amount ...

energy storage into a high-tech green technology are described. The origins of the operational experience of modern plants and the areas of research and development in enhancing the characteristics of the different components and the energy storage options ... he was granted the first patent for a solar engine and continued his work until 1880. He

An underwater energy storage system comprising a container where energy is stored by transporting water between the container and a body of water, is disclosed. 5 The container comprises a water- and gas-tight membrane surrounding a container volume, where the container is rendered mainly incompressible by a fill material comprising densely packed, ...

Looking more deeply, the activity in 2010 included patent applications by Lightsail Energy Inc and Expansion Energy LLC. Chart: Ben Lincoln / Potter Clarkson Mass-based energy storage . Turning to mass-based energy storage systems, pumped hydroelectric energy storage (PHES) has seen the most innovation among technologies.

3.2 Analysis of energy storage patents in Shenzhen With 49,000 patent applications in the electrochemical energy storage industry, Shenzhen ranks first among Chinese cities, leading significantly in total volume. Among them, there are 22000 invention patent applications and 27400 utility model patents.

Energy storage is a complementary technology for renewable energy systems and other power generation or backup systems. ... Our firm has the technical background and experience to handle energy storage technologies in many fields. ... patent prosecution, licensing, and, where necessary, enforcement of valuable patent rights. ...

The plethora of efficient energy storage systems created a jolt in the enhancement of exploration of the renewable energy resources and thereby reduced the extinction of the non-renewable energy resources. ... He shared this patent along with Philippe Touzain and Jacques Maire. From 1985 onwards, he worked as research associate at Center ...

A an energy storage system includes a crane and a plurality of blocks, where the crane is operable to move blocks from a lower elevation to a higher elevation (via stacking of the blocks) to store electrical energy as potential energy of the blocks, and then operable to move blocks from a higher elevation to a lower elevation (via unstacking of the blocks) to generate electricity ...

2020-11-20 Priority to CN202080092865.9A priority Critical patent/CN114946071A/en 2020-11-20 Priority to EP20825326.0A priority patent/EP4062477A1/en ... INTEGRATED ENERGY STORAGE SYSTEM BACKGROUND [0001] Generally described, a number of devices or components may be powered, at least in part, by an electric power source. In the context of ...

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