



# Colin electric energy storage patent

Is electricity storage innovation tackling the energy transition?

"The rapid and sustained rise in electricity storage innovation shows that inventors and businesses are tackling the challenge of the energy transition.

Can electrical energy storage solve the supply-demand balance problem?

As fossil fuel generation is progressively replaced with intermittent and less predictable renewable energy generation to decarbonize the power system, Electrical energy storage (EES) technologies are increasingly required to address the supply-demand balance challenge over a wide range of timescales.

How fast do batteries & electricity storage technology develop?

It reveals that between 2005 and 2018, patenting activity in batteries and other electricity storage technologies grew at an average annual rate of 14% worldwide, four times faster than the average of all technology fields. Innovation in Batteries and Electricity Storage - Analysis and key findings. A report by the International Energy Agency.

How fast does patenting a battery grow?

Between 2005 and 2018, patenting activity in batteries and other electricity storage technologies grew at an average annual rate of 14% worldwide, four times faster than the average of all technology fields, according to a joint study published today by the European Patent Office (EPO) and the International Energy Agency (IEA).

How can a secure energy system be achieved without reliance on fossil fuels?

This can enable a secure energy system without the reliance on fossil fuel, and support wider energy decarbonization via electrification of transportation, heat, and industry.

Did ETI invest \$14m in energy storage breakthrough with isentropic?

"ETI invest \$14m in energy storage breakthrough with Isentropic." 2012. An Analysis of Pumped Thermal Energy Storage With De-coupled Thermal Stores. Front "Gravity Power LLC." [Online].

2020-11-20 Priority to CN202080092865.9A priority Critical patent/CN114946071A/en 2020-11-20 Priority to EP20825326.0A priority patent/EP4062477A1/en ... Electrical energy storage with degassing room FR3137962A1 (en) 2022-07-12: 2024-01-19: A. Raymond Et Cie: Collector box and thermal management system comprising such collector box ...

1. A system for energy storage and electricity generation, comprising: an energy storage subsystem including at least one air storage vessel arranged in a borehole made in the ground, and configured to store energy in the form of compressed air, said at least one air storage vessel being surrounded by a compacted and thermally isolated filling material filling a ...



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Colin Francis has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO). ... Abstract: A hybrid fluid heating system for heating a production fluid using fuel and/or electric ...

A compressed air energy storage (CAES) system utilizes compressed air stored in a cavity for electric power and cold production. During periods of excess power production, atmospheric air is compressed then cooled in stages using energy from a motor/generator. Condensed water is then separated from the air which is then stored in a cavity.

The principle of gravity based energy storage is to use an electric motor to lift a mass and thereby store energy as potential energy. ... In Gravitricity Ltd's UK patent GB 2 585 124 B the energy storage system is said to enable a "gravity-based energy storage to have a significantly larger capacity in a single shaft for given capital cost ...

Abstract: A method of on-demand energy delivery to an active suspension system comprising an actuator body, hydraulic pump, electric motor, plurality of sensors, energy storage facility, and controller is provided. The method comprises disposing an active suspension system in a vehicle between a wheel mount and a vehicle body, detecting a wheel event ...

The patent is for a reinvention of the standard utility power meter; one that combines the ubiquitous metering and communications of a smart meter with a plug and socket interface for solar power, electric vehicles, and energy storage systems. The new meter will cut installation costs, provide seamless communication between the DER and the grid ...

An energy storage system (2) comprising a weighted object (6) suspended from a cable (8), a lifting device (10, 16) connected to the weighted object by way of the cable and arranged to move the weighted object through a substantially vertical distance, and means for generating electrical energy (16) connected to the lifting device. The system preferably comprises a guidance ...

Assemblies systems, and methods are disclosed for generating energy from natural forces and, more particularly, to energy generation using tidal action. A tidal energy conversion assembly includes a displacement vessel housing a directional converter that is coupled to an electrical power generator. The tidal energy conversion assembly further ...

Abstract: An energy storage system converts variable renewable electricity (VRE) to continuous heat at over 1000°C. Intermittent electrical energy heats a solid medium. Heat from the solid medium is delivered continuously on demand. Heat delivery via flowing gas establishes a thermocline which maintains high outlet temperature throughout discharge.

A compact energy storage system includes a high speed rotating flywheel and an integral motor/generator unit.



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The rotating components are contained within a vacuum enclosure to minimize windage losses. The flywheel rotor has a unique axial profile to both maximize the energy density of the flywheel and to maximize the volumetric efficiency of the entire system.

The market for battery energy storage is estimated to grow to \$10.84bn in 2026. The fall in battery technology prices and the increasing need for grid stability are just two reasons GlobalData have predicted for this growth, with the integration of renewable power holding significant sway over the ...

Abstract: A system and method for a liquid electrolyte used in secondary electrochemical cells having at least one electrode including a TMCCC material, the liquid electrolyte enabling an increased lifetime while allowing for fast discharge to extremely high depth of discharge. The addition of dinitriles to liquid electrolytes in electrochemical cells in which ...

Abstract: A control system for use with a working machine is provided, the working machine including a machine body, and a load handling apparatus coupled to the machine body and moveable by a movement actuator with respect to the machine body, the working machine being configured for use with at least one electric energy storage module. The ...

Energy storage enables electricity to be produced through renewable sources like solar and wind and then used when required. Energy may also be stored in the form of "clean" molecules, such as hydrogen, for future use in fuel cells. ... which in turn has significantly increased global patent activity. Energy storage solutions encompass ...

Abstract: Provided herein are energy storage device electrode films comprising a hybrid electrode film, and methods of forming such multilayer hybrid electrode films and energy storage devices comprising multilayer hybrid electrode films. Each hybrid electrode film may comprise a self-supporting dry coated active layer and a wet cast active ...

Qoerz-r A. QIGHTMIEE ATTORNEYS United States Patent C) 3,288,641 ELECTRICAL ENERGY STORAGE APPARATUS Robert A. Rightmire, Twinsburg, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio Filed June 7, 1962, Ser. No. 200,723 4 Claims. (Cl. 136-6) This invention relates generally to the utilization of an ...

Justia - Patents - Patents and Patent Application Resources. Abstract: A method of on-demand energy delivery to an active suspension system comprising an actuator body, hydraulic pump, electric motor, plurality of sensors, energy storage facility, and controller is provided. The method comprises disposing an active suspension system in a vehicle between ...

electric storage industry. Specifically, we reveal that patent filings in batteries and electricity storage have soared over the past ten years, at an annual growth rate of 14% versus just 3.5% on average i - highlighting a burst of innovation in the sector and a global battery technology race.

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FIG. 8 shows the method of charging 800 the pumped energy storage system 600 shown in FIG. 6. The method of charging 800 the pumped energy storage system 600 includes first heating the heated particles 102A, 805. The heating may be done in both the silo 101A using an in-silo heating element (such as 108, not shown in FIG. 6) using power from an ...

USPTO patent applications submitted by and patents granted to COLIN JOHN HALSEY. Log In Sign Up. Find a Lawyer; Ask a Lawyer; Research the Law ... a power distribution bus selectively connected with the electrical power storage device, ... The power system can further include an energy storage device configured to provide transient power to the ...

Abstract: Aspects of the present application correspond to utilization of a combined set of inputs to generate or train machine learned algorithms for utilization in vehicles with vision system-only based processing. A network service can receive a first set of inputs (e.g., a first data set) from a target vehicle including captured vision system data at a first point in time.

Abstract: An energy storage device includes: a number of cells; and a dual-active-bridge converter connected to the cells, wherein the cells are floating relative to the system and are galvanically isolated therefrom. The energy storage device can be included in an energy storage system that includes: a grid tie unit comprising at least one DC/AC converter; and ...

A hydro electric energy generation structure is disclosed. The structure comprises: a gravity wall forming a closed outer perimeter extending above an upper water level of an existing hydraulic reservoir, and extending below the reservoir floor; at least one water inlet hydraulically connecting a first penstock to a first turbine generator below the water inlet.

One aspect of the present invention is an energy storage device including a positive electrode containing: first positive active material particles containing a metal element capable of forming a conductive metal oxide; and second positive active material particles not containing the metal element, in which the first positive active material particles include a nickel-cobalt-manganese ...

A method for operating an electric energy storage system, comprising a plurality of electric energy storage units, with the following steps is described. At least one state of health variable, in particular an electrical resistance, of the plurality of electric energy storage units is determined in each case. At least one state of charge variable, in particular an electrical voltage, of the ...

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