Patented energy storage device

Can high power/energy density electrode materials be used for advanced energy storage devices?
This opens a new opportunity for achieving high power/energy density electrode materials for advanced energy storage devices.

What are the different types of energy storage systems?
Hence,a popular strategy is to develop advanced energy storage devices for delivering energy on demand. 1 - 5 Currently,energy storage systems are available for various large-scale applications and are classified into four types: mechanical,chemical,electrical,and electrochemical,1,2,6 - 8 as shown in Figure 1.

Why do we need electrochemical energy storage systems?
Nowadays our modern society is demanding flexible, low cost and lightweight electrochemical energy storage systems, which are very applicable in various fields ranging from portable consumer electronics to large industrial areas and energy management sectors.

How will government support electrochemical storage?
New research promoting soft-side innovations and business models will expedite integration of electrochemical storage into common markets. Further government support is necessary to promote responsible R&D spendingthat enables serious cost reductions across solar,wind,and storage,while also decarbonizing electricity and transportation.

Are flexible supercapacitors a good energy storage system?
Among the various energy storehouse systems,flexible supercapacitors are amazing devicesdue to their high surface area,flexibility,lightweight,shape versatility and significant energy density compared to traditional energy storage systems with unique properties of being environmentally friendly.

Are patents a valid indicator of innovation in the energy sector?
Following the work of Griliches 42,others evaluated patenting in the energy sector,and concluded that patents are a valid indicatorto measure innovativeness within the energy sector 2,28. This result has been extended and re-confirmed by a number of authors 43.

1. A method comprising: making an energy storage device by applying a dielectric film to an electrically conductive first electrode, the dielectric film comprising a film material that (i) is electrically insulative and/or exhibits a high permittivity and (ii) comprises a plurality of polymeric molecules; contacting the dielectric film with an electrically conductive ...

It can be seen that the number of gravity energy storage patents has shown an obvious increasing in the past five years, and showing a sustained growth trend. ... generation system based on gravity energy storage system has control instruction generating module generating gravity energy storage device energy storage instruction

and wind power ...

2008-01-29 Priority to US12/523,969 priority Critical patent/US8110964B2/en 2008-02-29 Assigned to DREXEL UNIVERSITY reassignment DREXEL UNIVERSITY ASSIGNMENT OF ASSIGNORS ... One example of suitable circuitry for transporting energy from the piezoelectric material to an energy storage device or a device that uses the energy is described in U.S ...

The patent filed by Dr. Akira Yoshino in US patent "secondary batteries" laid the foundation for establishment and commercialization of lithium ion battery as a prime energy storage device. The flexibility of these secondary energy storage devices to tune the size, shape and morphology has led to use these batteries from miniature devices ...

(57) Abstract: The present invention relates to a superconducting magnetic energy storage device comprising a coil (1) connected in series with a voltage source and wound by an electrically insulating superconducting cable (12). About. Further, the present invention relates to a high voltage system comprising a superconducting magnetic energy storage device, wherein the ...

Basically an ideal energy storage device must show a high level of energy with significant power density but in general compromise needs to be made in between the two and the device which provides the maximum energy at the most power discharge rates are acknowledged as better in terms of its electrical performance. The variety of energy storage ...

The present invention is directed to a low cost, high performance electrode for energy storage devices and energy storage systems and a method for making same is disclosed, where a flexible binder is mixed with partial active and conductive materials in the electrode formulation and activated by mixing with a minimum amount of solvent it is then mixed with the remaining ...