

# FAN JUNSHENG ENERGY STORAGE

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What is the Journal of Energy Storage? The Journal of Energy Storage is a publication that focuses on all aspects of energy storage. This includes systems integration, electric grid integration, modelling and analysis, novel energy storage technologies, sizing and management strategies, business models for operation of storage systems, and more.



How can energy storage systems meet the demands of large-scale energy storage? To meet the demands for large-scale, long-duration, high-efficiency, and rapid-response energy storage systems, this study integrates physical and chemical energy storage technologies to develop a coupled energy storage system incorporating PEMEC, SOFC and CB.



Can a large-capacity hydrogen storage system meet the demand for energy storage? For instance, if the portion of electricity with rapid fluctuations and the user's peak load are relatively small, a larger-capacity CB could serve as the base load for energy storage, while a smaller-capacity hydrogen storage system could meet the demand for rapid-response energy storage.



What are the main topics covered by the Journal of Energy Storage? 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.



What is hydrogen energy storage? Hydrogen energy storage utilizes electrolytic cells and fuel cells for the conversion between electricity and hydrogen energy. For hydrogen production, the proton exchange membrane electrolysis cell (PEMEC) is renowned for its high electrolysis efficiency (58 %???70 %) and economic advantages.

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How to calculate RTE and exergy efficiency of hydrogen energy storage system? The round-trip energy efficiency (RTE) and exergy efficiency of the hydrogen energy storage system are defined as follows: (21)  $\eta = \frac{W_{ex,h}}{W_{f,H2} + W_{e,H2} + W_{c,H2}}$  where  $W_{e,H2}$  is the power generated by the H2 expander of the SOFC subsystem, kW;  $W_{c,H2}$  is the power input of the H2 compressor of the PEMEC subsystem, kW.



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Pu Fan; Junsheng Yu; For organic solar cells (OSCs), nickel oxide (NiOx) is a potential candidate as the hole transport layer (HTL) material. The development of novel visual energy storage



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,???Chemical Reviews?????Opportunities of Flexible and Portable Electrochemical Devices for Energy ???



Ultrahigh discharge energy density ( $W_{dis} = 10.5 \text{ J cm}^{-3}$ ) and efficiency ( $\eta = 87\%$ ) have been obtained in doped  $\text{BiFeO}_3$   $\text{BaTiO}_3$  ceramic multilayers by achieving an electrically rather than chemically homogeneous ???