

What are the strategies for developing advanced energy storage materials?

The strategies for developing these advanced energy storage materials, including nanostructuring, nano-/microcombination, hybridization, pore-structure control, configuration design, surface modification, and composition optimization, are discussed.

How can cluster-based layered materials improve energy storage capacity?

For the energy storage application of cluster-based layered materials, the stacking structure of layered materials provides main contribution, while clusters can improve stability and further enhance energy storage capacity.

How can clusters improve the electrochemical performance of layered materials?

Using clusters as structural units to regulate the lattice structure and composition of layered materials is an effectively strategy to enhance the electrochemical performance of materials. Rational designing clusters and layered structures to construct new layered materials provides broad prospects for the energy storage application.

Can redox clusters and high-capacity layered materials improve energy storage performance?

This example is a good reference to demonstrate the combination of redox clusters with high-capacity layered materials to construct a hybrid material system with improved energy storage performance.

Can cluster-based layered materials accelerate the design and synthesis of new materials?

Our review not only provides a profound understanding of cluster-based layered materials but also may accelerate the design and synthesis of new materials and broaden their application scope. Fig. 1. Schematic diagram of design and synthesis of cluster-based layered materials and their applications. 2.

What are composite-based structural energy storage devices?

Various concepts of composite-based structural energy storage devices, capable of storing electrical energy while simultaneously bearing load have been introduced in the fields of aerospace and automotive engineering [37,,,].



Advanced energy storage materials industry cluster



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