

Title: Small energy storage device chemistry

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We explore the diverse applications of nanomaterials in batteries, encompassing electrode materials (e.g., carbon nanotubes, metal oxides), electrolytes, and separators. To address challenges like interfacial side ...

Novel energy storage concepts incorporating new materials and chemical processes may offer routes to circumvent some key obstacles to existing SESDs (Figure 1) and enable faster implementation in ...

In this review, the recent advances of graphene-based materials for miniature energy harvesting and storage devices are summarized, including solar cells, mechanical energy harvesters, moisture and liquid flow ...

In this Review, we discuss the roles of anion chemistry across various energy storage devices and clarify the correlations between anion properties and their performance indexes.

Herein, this review systematically summarizes the latest progress in intrinsic self-healing chemistry for energy storage devices. Firstly, the main intrinsic self-healing mechanism is introduced.

This review is intended to provide strategies for the design of components in flexible energy storage devices (electrode materials, gel electrolytes, and separators) with the aim of developing energy storage ...

In such flexible and portable devices, semi-solid/solid electrolytes besides anodes and cathodes are the necessary components determining the energy/power performances.

This review elaborates the current challenges and future perspectives of energy storage microdevices.

As well as the intrinsic electrochemical performance of different chemistries, it is important to consider device energy densities in existing embodiments and projected to future embodiments that might be compatible ...

Chemical Energy Storage systems, including hydrogen storage and power-to-fuel strategies, enable long-term energy retention and efficient use, while thermal energy storage technologies facilitate ...

