

Energy storage impact of mxene

How does MXene reactivity affect the performance of energy storage materials?

The high reactivity of exposed MXene metal atoms promotes oxidation of the surface and edges,³⁰⁰ which reduces the conductivity and affects the performance of MXene-based materials in energy storage applications.

Are MXene materials the future of energy storage?

MXene materials offer a wealth of attributes that address critical challenges in energy storage, and their ongoing exploration holds promise for revolutionizing the field and enabling the development of more efficient, durable, and safer energy storage devices.

Can MXene serve as an efficient hydrogen storage catalyst?

Recent studies have also shown that MXene can serve as an efficient hydrogen storage catalyst. This review aims to summarize the latest research achievements in the field of MXene, especially its performance and application in energy storage. Different synthesis techniques have different effects on the energy storage performance of MXene.

Can MXenes be used for energy storage?

Thus, this versatile composite material, as well as other transition-metal sulfides such as CdS or CuS nanoparticles combined with MXenes, has the potential for utilization in flexible devices and energy storage applications.

How synthesis methods affect the energy storage performance of MXene?

Different synthesis techniques have different effects on the energy storage performance of MXene. In this review, various common synthesis methods and the latest innovations in synthesis methods are discussed. MXene is prone to oxidation, and how to resist oxidation is also an important topic in MXene research.

How stable is MXene?

The stability of MXene is correlated with the reliability of batteries and other energy storage and conversion devices employing MXenes in their components. Thus, studying the chemical degradation mechanism and the development of corresponding protection protocols that afford stable MXenes deserve more attention ^{190, 191, 192}.

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