

Semiconducting quantum dots (QDs) have received huge attention for energy conversion and storage due to their unique characteristics, such as quantum size effect, ...

In this Perspective, we present an overview of the recent progress regarding topological quantum catalysis. We describe the open problems, and the potential applications of TQMs in water ...

1. Introduction Lithium metal batteries (LMBs) are promising candidates for the next-generation energy storage systems owing to the much higher theoretical energy density ...

CQD-based composites are used as charge carriers in different energy storage materials (like batteries and supercapacitors) and as catalysts in energy storage (like overall ...

Recent studies have suggested that more than 27% of existing materials are topological and exhibit intrinsically high electrical conductivity with high stability protected by ...

principles which were developed two centuries ago. While there is an ongoing intense effort aimed at improving their performance through optimization of the materials and the device ...

Quantum batteries are energy storage devices that utilize quantum mechanics to enhance performance or functionality. While they are still in their infancy, with only proof-of-principle ...

1 ??#0183; In the global race to develop next-generation energy storage devices, researchers at Monash University have taken a major step forward. Their newly developed carbon-based ...

Topological quantum materials (TQMs) have symmetry-protected band structures with useful electronic properties that have applications in information, sensing, energy and other ...

Battery and energy storage materials Background The design and manufacturing of safer, less expensive, and more effective energy storage devices is a critical challenge in a wide variety of ...

Abstract Redox flow batteries (RFBs) are a promising technology for stationary energy storage applications due to their flexible design, scalability, and low cost. In RFBs, energy is carried in ...

These include the growth, physical properties, and novel quantum effects of low-dimensional quantum materials; the design and development of intelligent response materials for adsorbing ...

Although quantum computing is in its early days, the potential impact that it can have on energy storage

