

With the increasing demand for high energy and power energy storage devices, lithium metal batteries have received widespread attention. Li metal has long been regarded as an ideal candidate for negative electrode due to its high theoretical specific capacity (3860 mAh g⁻¹) and low redox potential (-3.04 V vs. standard hydrogen electrode). However, notorious dendrite, ...

Toward emerging two-dimensional nickel-based materials for electrochemical energy storage: Progress and perspectives. Weili Xu, Xun Zhao, Feiyang Zhan, Qingqing He, ... Lingyun Chen. Pages 79-135 View PDF. Article preview. select article Recent progress on enhancing the Lithiophilicity of hosts for dendrite-free lithium metal batteries.

Ti₃C₂T_x MXene anode often faces the great challenge of a low capacity due to its sluggish ion transport kinetics. Herein we report iodine-redox-chemistry-modulated intelligent ion transport channels in Ti₃C₂T_x MXene, enabling its Li-ion storage beyond theoretical capacity. The -I terminations modified on the Ti₃C₂T_x surface (I-Ti₃C₂T_x) are oxidized into linear -I₃ in the ...

Zinc-ion batteries (ZIBs) is a promising electrical energy storage candidate due to its eco-friendliness, low cost, and intrinsic safety, but on the cathode the element dissolution and the ...

Large-scale renewable energy storage devices are required and widely extended due to the issues of global energy shortage and environmental pollution [1, 2]. As low-cost and safe aqueous battery systems, lead-acid batteries have carved out a dominant position for a long time since 1859 and still occupy more than half of the global battery market [3, 4].

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It is still a great challenge for dielectric materials to meet the requirements of storing more energy in high-temperature environments. In this work, lead-free ...

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Because of their availability, adjustable microstructure, varieties of forms, and large specific surface area, porous carbon materials are of increasing interest for use in hydrogen storage adsorbents and electrode

materials in supercapacitors and lithium-sulfur cells from the viewpoint of social sustainability and environmental friendliness. Therefore, much effort has been made ...

Aqueous rechargeable Zn Ni batteries (ARZNBs) have been broadly considered as beyond-lithium energy-storage devices owing to their safety and potentially high energy density. However, the current practical ARZNBs suffer from short-circuit attack led by inherent problem of zinc anodes. Among the optimization methods of Zn anodes, proper ...

In this review, the evolution process from the origin of electrometallurgy to the discovery of energy storage batteries of DDBs is briefly introduced. Furthermore, two main types of DDBs ...

Large-scale renewable energy storage devices are required and widely extended due to the issues of global energy shortage and environmental pollution [1,2]. As low-cost and safe aqueous battery systems, lead-acid batteries have carved out a dominant position for a long time since 1859 and still occupy more than half of the global battery market ...

DOI: 10.1021/acsaem.1c01658 Corpus ID: 238736020; Tailoring Dielectric and Energy Storage Performance of PVDF-Based Relaxor Ferroelectrics with Hydrogen Bonds @article{Zhang2021TailoringDA, title={Tailoring Dielectric and Energy Storage Performance of PVDF-Based Relaxor Ferroelectrics with Hydrogen Bonds}, author={Meirong Zhang and ...

In this paper, we identify key challenges and limitations faced by existing energy storage technologies and propose potential solutions and directions for future research and ...

(DOI: 10.1039/C2JM34066F) Because of their availability, adjustable microstructure, varieties of forms, and large specific surface area, porous carbon materials are of increasing interest for use in hydrogen storage adsorbents and electrode materials in supercapacitors and lithium-sulfur cells from the viewpoint of social sustainability and ...

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Prussian blue analogues (PBAs, A₂T[M(CN)₆], A = Li, K, Na; T = Fe, Co, Ni, Mn, Cu, etc.; M = Fe, Mn, Co, etc.) are a large family of materials with an open framework structure. In recent years, they have been intensively investigated as active materials in the field of energy conversion and storage, such as for alkaline-ion batteries (lithium-ion, LIBs; sodium-ion, NIB; and potassium ...

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