Special Issue

Energy Storage Materials: Advances in Design, Characterization, and AI-Driven Discovery

Message from the Guest Editor

The development of cathode active materials (CAMs) is essential for advancing energy storage technologies, particularly in lithium-ion batteries (LIBs), sodium-ion batteries, and solid-state devices. These materials directly influence the electrochemical performance, stability, and sustainability of energy storage systems, which are vital for applications in electric vehicles, portable electronics, and large-scale grid storage. Given the growing demand for more efficient and environmentally friendly energy storage solutions, research on the design, synthesis, and characterization of CAMs is crucial for enabling next-generation high-performance batteries.

This Special Issue aims to provide a comprehensive view of recent advancements in CAMs, encompassing a broad range of research areas, from novel material design and advanced characterization techniques to real-world applications in next-generation energy storage systems. It reflects the interconnected nature of these research areas as the development of CAMs involves multi-disciplinary approaches, including material science, electrochemistry, and advanced characterization techniques.

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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