

## عنوان مقاله:

Recent Advances in Metal-based Nanomaterials for Battery Applications

## محل انتشار:

سومین همایش بین المللی تحقیقات در علوم و فناوری نانو (سال: 1402)

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## خلاصه مقاله:

Due to population and economic growth, the global energy demand has increased significantly. Various energy resources, such as bioenergy, wind, geothermal/solar energy, and other fuel technologies, as well as low-cost energy storage has been implemented to address the energy crisis. Rechargeable batteries have been considered stable electrochemical energy storage devices to store the intermittent electric output. This review examines the potential of nanotechnology in batteries, particularly metal/metalloid-based nanoparticles, because of their chemical properties and superior physical. The article presents recent advancements in metal/metalloid-based materials and highlights the scientific and socioeconomic benefits of using these materials over conventional graphitic anodes. The review also compares metal/metalloid nanoparticles for electrochemical applications, including metal-organic frameworks, metal oxides, and graphene/metal nanomaterials. Finally, the article addresses future challenges for developing possible .batteries with metal/metalloid-based nanoparticles

## کلمات کلیدی:

LIBs (Lithium ion batteries), Metal/metalloid nanoparticles, Nanomaterials, Energy storage

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