

عنوان مقاله:

A review on bimetallic composites and compounds for solar cell applications

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خلاصه مقاله:

The scientific community has developed new technologies, including solar cells (SCs), to meet global energy demands. SCs convert solar energy into electrical energy, providing renewable, sustainable, and green energy. Despite the availability of PV systems for many years, power generation through SC technology remains costly due to the low conversion efficiency (CE). Their low CE is due to limitations in semiconducting materials. In the present review, the basic mechanism of SC and techniques for modify SC have been discussed. The main focus of this review is to given an overview about the bimetallic materials and their application in SC. Bimetallic materials consist of two metallic components that can be synthesized using different methods. They exhibit exceptional properties, including improved electrical conductivity, tunable electrochemical activity, and high charge capacity compared to monometallic materials, making them promising candidates for use as electrochemical catalysts and photocatalysts. Various types of bimetallic composites and compounds, such as, oxides, phosphide, sulfide and carbon-based bimetallic composites is explained in the context of their compositions, synthesis techniques and their power generation efficiency. In the last portion of review, the importance of bimetallic materials in SC application with their possible promising research direction and challenges are presented. The scientific community has developed new technologies, including solar cells (SCs), to meet global energy demands. SCs convert solar energy into electrical energy, providing renewable, sustainable, and green energy. Despite the availability of PV

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