

عنوان مقاله:

Preparation of counter electrode based on graphene - ironoxide nanocomposite for dye-sensitized solar cell

محل انتشار:

سومین کنفرانس بین المللی دستاوردهای نوین پژوهشی در شیمی و مهندسی شیمی (سال: 1395)

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خلاصه مقاله:

Fe₃O₄ -reduced graphene oxide (Fe₃O₄-RGO) counter electrode (CE) is prepared as a counter electrode for dye-sensitized solar cell (DSSC). Fourier transform infrared spectroscopy (FTIR) energy dispersive spectrometer (EDS) and field emission scanning electron microscopy (FESEM) indicate clearly the formation of Fe₃O₄-RGO nanocomposite. To evaluate the chemical catalysis and stability of prepared CEs toward I³- reduction and the interfacial charge transfer properties, Fe₃O₄-RGO nanocomposite have characterized by cyclic voltammetry. Under AM 1.5 irradiation (100 mW cm⁻¹), the DSSC based on the Fe₃O₄-RGO show a maximum power conversion efficiency (PCE) of 5.91%, suggesting that the Fe₃O₄-RGO nanocomposite is one of effective CE materials for low-cost DSSCs.

کلمات کلیدی:

Dye-sensitized solar cell, Counter electrode, Graphene, iron oxide

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