

Graphene and Carbon Nanotubes As the Catalytic Counter Electrode of High-Performance Dye-Sensitized Solar Cells

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Dye-sensitized solar cells (DSCs) are regarded as the next-generation solar cells arising from their low fabrication cost and decent photovoltaic efficiency. The counter electrode of DSCs should be conductive and catalytic for the reduction of the redox species in the electrolyte. Platinum is traditionally used as the counter electrode of DSCs. But Pt is expensive and degrades in the electrolyte of DSCs. Here, I will report high-performance dye-sensitized solar cells with graphene, carbon nanotubes or their composites as the counter electrode of DSCs. All these materials can effectively catalyze the reduction of the redox species of DSCs. They can overperform platinum as the counter electrode of DSCs.