

Graphene-dot Armored PtMo Nanosponge for Highly Stable Electro-catalyst of Dye-sensitized Solar Cell

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So far, Pt is used to be a highly efficient and stable electrocatalyst of Dye-Sensitized Solar Cell(DSSC). However, Pt is one of the rare resources and very expensive to apply for commercial products. Herein, we introduced graphene-dot armored PtMo nanosponge for electrocatalyst of the counter electrode in DSSC. This material has the morphology of three-dimensional nanosponge wrapped with graphene dots, which is confirmed by TEM. It is synthesized with exfoliation of carbon dots during the co-reduction of PtMo precursors and carbon dots at a low temperature in an aqueous solution. We can observe its electrocatalytic activity and PV performance by EIS, Tafel, JV, and IPCE. Also, this catalyst shows the stability and unique property caused by its high porous morphology, and we confirmed it by CV and EIS measurements.