

Suppression of Ion Migration in Perovskite Solar Cells with MAPbI₃Cl_{3-x}/Ag-rGO Composite

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It is known that the ion migration in perovskite molecules under thermal annealing and light soaking conditions is intrinsic and causes current density-voltage hysteresis and degradation in PSCs. In order to solve such a problem, we prepared p-type silver nanoparticles-anchored reduced-graphene oxide (Ag-rGO) and synthesized perovskite/Ag-rGO composites. The perovskite/Ag-rGO composites in the active layer of cells not only impede the destructive ions diffusion in perovskite phase but also accelerate the charge transport in the active layer. the long-term stability of the composites-based PSCs was exceptional, retaining almost 100 % of the initial values of performance parameters over 330 days under ambient condition (25-30 oC, 45-57% humidity).