

Fabrication of Graphene Oxide Based Planar Hetero-Junction Perovskite Solar Cells

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Abstract : In this work, we have developed a highly stable planar heterojunction perovskite solar cells (PSCs) with a architecture (ITO/GO/PEDOT:PSS/MAPbI₃/PCBM/Carbon tape). The PSCs was fabricated under air using GO/PEDOT:PSS as hole transport layer while the carbon tape used as a back contact to complete the device. The fabricated PSCs device exhibited good stability and performance in terms of power conversion efficiency of 5.2%. The PSCs devices were exposed to ambient condition for 4 days which shows excellent stability confirmed by XRD analysis. We believed that the stability of the planar heterojunction perovskite solar cell may be due the presence of GO which inhibits the direct contact between PEDOT:PSS and MAPbI₃.

Keywords : graphene oxide, perovskite solar cells, hole transport layer, PEDOT:PSS

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