

Characterization of co-deposited ZnO-graphene electron transfer layer prepared by cyclic voltammetry in inverted solar cells

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ZnO as electron transfer layer(ETL) was co-deposited with graphene in inverted solar cells by cyclic voltammetry. Scan rate and cycle were adjusted to maintain optimal light transmittance during co-deposition. To increase electric conductivity and light transmittance, graphene oxide concentration was adjusted to 0.01~0.05 wt%. Morphology and composition analysis of ETL were performed by SEM, XRD and XPS. As a result of XRD, in 2theta, graphene and graphite were detected at 5, 25degrees in ETL. C1 and O1 peak were detected in XPS analysis. Photoelectric conversion efficiency of device was changed by ZnO-graphene precursor concentration.