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Recent trends in polymer tandem solar cell research

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ABSTRACT

Polymer solar cells have many intrinsic advantages such as low material and manufacturing costs, flexibility and light weight. Recently, polymer tandem solar cells have attracted significant attention due to their potential to achieve higher performance than single cells. This trend article intends to provide the latest progress in polymer tandem solar cell technology with a focus on the materials both active layer materials and interfacial materials for sub-cell interconnection. Following an introduction of the structure and current status of polymer tandem solar cells, wide and low band-gap polymers which have been or could be used for tandem solar cells will be reviewed. Equally critical for polymer tandem solar cells is the interconnecting layer consisting of p- and n-type interfacial layers, which will also be briefly discussed in this review. Finally, as the measurement of the tandem solar cells is more complicated than that of single solar cells, this article will also address polymer tandem solar cell measurement issues.

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