

Short-Term and Long-Term Stability in Polymer:Nonfullerene Solar Cells

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Organic solar cells have gained great attention owing to their advantages including wet-coating processes for low-cost flexible solar modules. The power conversion efficiency of organic solar cells with polymer:nonfullerene bulk heterojunction layers has reached ~16% and further improvement is being attempted. Nonfullerene acceptors are known to have structural merits such as the extended light absorption up to near-infrared region and improved charge transport owing to planar core groups with more than five heterocycles. However, the stability of polymer:nonfullerene solar cells has been considered one of the big hurdles for commercialization. In a viewpoint of manufacturing, it can be the first step to secure the long-term storage stability of polymer:nonfullerene solar cells even under the dark and/or indoor light condition. In this presentation, we briefly demonstrate how the short-term and long-term stability of polymer:nonfullerene solar cells can be according to the storage condition.