

Photophysical Processes in Non-fullerene Organic Solar Cells

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Message from the Guest Editors

In the past few years, the development of non-fullerene acceptors represented by Y6 has greatly improved the power conversion efficiency of organic solar cells. At present, the power conversion efficiency of organic solar cells exceeds 19%, showing their broad commercial prospect. On the one hand, the improvement in the photoelectric conversion efficiency of non-fullerene solar cells benefits from the good photon absorption characteristics of non-fullerene materials in the near-infrared region; on the other hand, this is attributed to their unique photophysical properties, which differ from those of fullerene solar cells. For example, the exciton diffusion length of the newly emerging Y acceptors can exceed 50 nm, which is much longer than that of traditional acceptors and conducive to exciton dissociation in non-fullerene solar cells. However, the physical processes underlying these issues need to be further clarified. We aim to discuss various topics related to the photophysical mechanism in non-fullerene solar cells, including advances in device physics and photoelectric conversion dynamics.

Both original research articles and reviews are welcome.

