

New carbazole based derivatives for inverted perovskite solar cells: Optical, morphological and electrical properties

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Carbazole-based derivatives have recently presented a lot of interesting applications in photorefractive, photoconductive, solar cells, and light-emitting properties etc due to their low production cost and high reactivity. In this paper, a new carbazole based small organic molecule is designed, characterized and utilized as an effective hole transporting material (HTM) for solar cells applications. The synthesized molecule showed good absorbance in the visible region, indicating good light absorption and optical properties. The photoluminescence (PL) spectrum exhibited a prominent emission in the green region, which again supported good optical properties. It is believed that the synthesized carbazole based molecule would be an excellent HTM for fabricating high performance perovskite solar cells.