Organic indoor solar cells

Indoor organic solar cells for low-power IoT devices: recent progress, challenges, and applications. Journal of Materials Chemistry C 2023, 11 (37), 12486-12510.

Noteworthily, the cell based on PB2:FCC-Cl achieves an outstanding PCE of 33.0%, which is the highest value of OPV cells for indoor applications. In addition, the indoor ...

With the growing development of the Internet of Things, organic photovoltaic (OPV) cells are highly desirable for indoor applications because of the unique features of light ...

Up to now, a few organic solar cells have realized over 20% power conversion efficiencies (PCEs) under indoor light illumination, which are comparable or even superior to ...

Among abundant types of photovoltaics (PVs), organic solar cells (OSCs) have unique advantages including tunability of energy level, flexibility, low-cost ... The reported ...

IPVs thereby become a growing research field, where various types of PV technologies including dye-sensitized solar cells (14, 15), organic photovoltaics (16, 17), and ...

With the growing development of the Internet of Things, organic photovoltaic (OPV) cells are highly desirable for indoor applications because of the unique features of light weight, flexibility, and coloration. Emission spectra ...

The resulting Se cells exhibit a PCE of 15.1% under 1000 lux indoor illumination and show no performance degradation after 1000 hours of continuous indoor illumination ...

Organic photovoltaic (OPV) cells have prominent advantages such as light weight, flexibility, and tunable absorption spectra, exhibiting significant prospects for indoor ...

Tailoring microstructure and morphology via sequential fluorination to enhance the photovoltaic performance of low-cost polymer donors for organic solar cells

In this work, we demonstrate the critical importance of the following: (1) temporal stability and spatial homogeneity of the light sources, (2) calibration of the spectral irradiance ...

In this paper, we report high-efficiency non-fullerene organic photovoltaic (OPV) cells with over 30% power conversion efficiency (PCE) under indoor conditions. Our results ...

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Indoor photovoltaic is one of the most important applications of organic solar cells (OSCs). As different from AM1.5G sunlight with broad spectra from the visible to near ...

Matthews and group have shown that the power density of GaAs solar cell is three times more than that of dye sensitized solar cells at indoor light levels ... The first report ...

(c) Market size of indoor solar cells and wireless sensor (WS). (d) Intensity and spectral range of the different light sources including the standard solar spectrum (AM1.5G), ...

From this systematic review on indoor solar cells based on inorganic materials, it is evident that among various inorganic PV materials, the III-IV semiconducting compound ...

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