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研究简报

# 苝二酰亚胺/聚噻吩复合膜的光电性能研究

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摘要

关键词 苝二酰亚胺 聚噻吩 光伏器件 光电性能

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# PHOTOELECTRIC PROPERTIES OF PHT/PDI COMPOSITE FILMS

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**Abstract** Photovohaic properties of blend composites,composed of *N,N'*-didodecyl-3,4,9,10-perylene- biscarboximide (PDI) and a soluble conductive polymer poly(3-hexylthiophene) (PHT),are reported. PDI can form the interpenetrating network structure with PHT chmns,as evidenced in the UV-Vis spectrum. The investigation of the photoluminescence (PL) spectra revealed that PL of PHT was quenched when it was blended with PDI. The Dhotovohaic devices using PHT as both the sensitizer and hole conductor,and PDI films as the electron conductor were prepared to estimate the photovoltaie performance of the blend films. An improvement of conversion efficiency in the blending ceHs compared with that of the pure PHT cells was observed. Spectral properties and current-voltage(*I-V*) characteristics of the PHT/PDI composite films showed that the perylene diimide dopant can improve the photovoltaic performance of PHT films significantly through the increase of visible light absorption,exeiton dissociation,diffusion and transportation.

**Key words** Perylene diimide Polythiophene Photovoltaic device Photoelectric properties

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