高等学校化学学报 2007 , 28 (11): 2099-2101 ISSN: 0251-0790 CN: 22-1131/O6

研究简报

有机小分子电致发光器件的蓝光主体材料的合成与表征

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收稿日期 2007-3-6 修回日期 网络版发布日期 2007-11-12 接受日期

摘要 报道了应用于溶液法制备器件的小分子蓝光主体材料2-叔丁基-9,10-二(9,9-二正丙基芴基)蒽(TBPFA), 合成路线如Scheme 1所示, 该化合物具有较高的荧光量子效率,以它作为主体材料, 采用旋涂法制备了掺杂与非掺杂型单层器件, 并对器件性能进行了初步研究.

关键词 有机电致发光器件(OLEDs) 溶液法 蓝光主体材料 蒽衍生物

分类号 0621 0649

Synthesis and Characterization of a New Small Organic Molecules Blue-Light Emitting Host Materials Suitable for Solution Process

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Abstract The current trend for fabricating OLEDs is solution processing in the scope for low-cost manufacturing, but most small organic molecules must be deposited in vacuum to fabricate devices due to their poor solubility. In this paper, a new soluble anthracene derivative 2-*tert*-butyl-9,10-bis(9,9-dipropylfluorenyl)anthracene(TBPFA) was designed and synthesized. The compound exhibited pure-blue-light emitting(λ_{max}=443 nm in dilute dichloromethane, λ_{max}=450 nm in solid film) and high fluorescence quantum efficiency. The none-doped and doped single-layer devices were prepared successfully by spin coating process with TBPFA as blue-light emitting material and blue-light emitting host material respectively. In the doped device, TBPFA can transport energies to TBPe which is a good blue-light emitting material efficiently.

Key words OLEDs Solution process Blue-light emitting host material Anthracene derivative

DOI:

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