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材料物理和化学

基于Re(Ⅰ)配合物有机电致发光器件的研究进展

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摘要： Re(Ⅰ)配合物能够产生较好的自旋轨道耦合,其内量子效率在理论上可以达到100%,比荧光材料高3倍。因其具有相对短的激发态寿命、室温下高的磷光量子效率、较好的热稳定性和化学稳定性等优点使其被广泛关注。文章对Re(Ⅰ)配合物在有机电致发光器件中的研究进展进行了综述,并对Re(Ⅰ)配合物分子设计与电致发光器件的发展前景进行了展望。

关键词： Re(Ⅰ)配合物 电致发光 器件

Research Progress of Re (I) Complexes in OLEDs

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Abstract: The theoretical internal quantum efficiency of Re(Ⅰ) complexes is 100%, which is three times higher than that of fluorescence materials. The high quantum efficiency is attri-buted to the strong spin-orbit coupling of the heavy metal rhenium. Re(Ⅰ) complexes have the desirable properties including relatively short excited state lifetime, high phosphorescence quantum yield at room temperature, outstanding thermal stability and chemical stability. This review sketches the development of Re(Ⅰ) complexes in OLEDs which have been published. It also prospects the molecular designing and potential application future in OLEDs of Re(Ⅰ) complexes.

Keywords: Re(Ⅰ) complexes electroluminescent device

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