



材料合成及性能

助熔剂法制备的(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉绿色荧光粉的发光性能

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摘要：选取典型的助熔剂,利用助熔剂法制备了节能灯用(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉绿色荧光粉,并对其发光性能进行了对比测试。研究了各单一或复合助熔剂对(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉荧光粉的发光亮度及颗粒形貌的作用及影响,并找到了最佳复合助熔剂组分为0.2%H₃BO₃+2.0%Li₂CO₃+2.0%AlF₃(质量分数)。所制备的(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉荧光粉样品具有较为规则的形貌,且发光亮度与(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉现有商用粉的比值为103:100。

关键词：(Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ 助熔剂法 荧光粉

Synthesis and Luminescence Properties of Green (Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ Phosphor by Flux Method

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Abstract: The lamp used green (Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ phosphor was synthesized by the flux method using different fluxes, and the luminescent properties of obtained samples were investigated in details. The influence of single flux and multi-fluxes on the brightness and morphology of particles was also studied. It is found that the optimal components of the multi-fluxes is 0.2%H₃BO₃+2.0%Li₂CO₃+2.0%AlF₃ (mass fraction). The particles of optimal (Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ sample have regular and uniform morphology, and the rate of brightness of this sample to present commercial (Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ phosphor is about 103:100.

Keywords: (Ce_{0.67},Tb_{0.33})MgAl₁₁O₁₉ flux method phosphor

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