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论文

白光LED用LiSrBO₃:Sm³⁺材料的光谱特性

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摘要:

采用固相法制备了一种新型的白光LED用LiSrBO₃:Sm³⁺红色发光材料,并研究了材料的光谱特性.材料的激发与发射光谱显示其能够被404 nm近紫外光激发,发射599 nm红光,很好的符合近紫外光激发下白光LED的需要.研究了Sm³⁺浓度对材料发射强度的影响,发现Sm³⁺浓度为3 mol%时,强度最大.添加Na⁺或K⁺也可提高LiSrBO₃:Sm³⁺材料的发射强度.

关键词: 白光发光二极管 LiSrBO₃:Sm³⁺ 光谱特性

Spectral characteristics of LiSrBO₃:Sm³⁺ phosphor for white LED

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Abstract:

A novel red phosphor, LiSrBO₃:Sm³⁺, is synthesized by solid state reaction method, and the spectral characteristics are investigated. The emission and excitation spectra indicate that

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LiSrBO₃:Sm³⁺ phosphor can be effectively excited by near ultraviolet (UV) (404 nm), and exhibits a satisfactory red performance (599 nm), nicely fitting in with the widely applied UV chips. The effect of Sm³⁺ concentration on the emission intensity is studied, and the results show that the intensities reach the peak value at 3 mol% Sm³⁺. With doping Na⁺ or K⁺, the intensities are enhanced.

Keywords: White LED LiSrBO₃:Sm³⁺ Spectral characteristics

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