

论文

LED白光光源用Pr³⁺,Ce³⁺:YAG光纤制备与特性

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摘要:

采用激光加热基座法制备LED白光光源用Pr³⁺,Ce³⁺:YAG单晶光纤荧光材料,对所制备材料的荧光光学特性进行了实验分析结果表明,在Pr³⁺和Ce³⁺共掺发光过程中,Pr³⁺离子的发光可以通过Ce³⁺敏化作用使得其610 nm谱线荧光强度得到有效增强|利用所制备Pr³⁺,Ce³⁺:YAG单晶光纤荧光材料与蓝色LED合成产生高效LED光纤白光光源,光源的色坐标为(x=0.322, y=0.335),显色指数84.3,表明光源品质良好,有望用于未来高效大功率光纤白光光源.

关键词:

Growth and Characteristics of Pr³⁺ and Ce³⁺ ions dopedYAG Crystal Fiber for White LED

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Abstract:

Pr³⁺,Ce³⁺:YAG crystal fibers have been grown by the laser heated pedestal growth method as the white LED materials.The Luminescence properties of the materials was investigated and results show in Ce³⁺ ions and Pr³⁺ ions codoped fluorescence emission process the Pr³⁺ ions 610nm fluorescence intensity can be increased by Ce³⁺ ions sensitization. High efficient white LED was get by combined Blue LED and grown Pr³⁺,Ce³⁺:YAG crystal fiber. The white LED was improved with the CIE color coordinates (x=0.322, y=0.335) and 84.3 of the CRI. It can be used for high efficient power white LED in future.

Keywords:

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