

硼酸盐荧光粉研究进展

摘 要

近几年来多色硼酸盐荧光粉研究十分广泛。目前来看，其存在的不足之处有紫外激发的各个颜色的荧光粉发光效率不高，又或者是各个光一些波段的缺失等。本文通过比较离子掺杂的多色硼酸盐荧光粉的一系列性能得出：荧光粉材料的一系列的发光指标都与晶体结构有关，当选择对称较高的硼酸盐基质时，合成的硼酸盐荧光材料发光效率较好；激活剂的种类较多，跃迁方式也各不相同，有些激活离子受基质的环境影响较大，选择与其掺杂的硼酸盐荧光粉发光强度比较好。

关键词：硼酸盐，多色荧光粉，离子掺杂

Abstract

In recent years, polychrome Borate Phosphors have been widely studied. At present, there are some shortcomings, such as the low luminous efficiency of the phosphors of various colors excited by ultraviolet, or the lack of some bands of each light. In this paper, a series of properties of ion doped polychromatic Borate Phosphors are compared. It is concluded that a series of luminescent indexes of phosphors are related to the crystal structure. When choosing a relatively symmetrical borate matrix, the luminescent efficiency of the synthesized Borate Phosphors is better; there are many kinds of activators and different transition modes, some of the activated ions are greatly affected by the environment of the substrate, so it is better to choose the borate phosphor with which they are doped.

Keywords: borate, polychrome phosphor, ion doping

目 录

1 前言	1
1.1 硼酸盐体系介绍	1
1.2 硼酸盐荧光粉材料简介	1
1.3 硼酸盐荧光粉材料的研究进展	2
1.4 研究目的和内容	2
2 正文	4
2.1 红色硼酸盐荧光粉	4
2.1.1 掺杂三价铕 (Eu^{3+}) 的硼酸盐	4
2.1.2 掺杂三价钐 (Sm^{3+}) 的硼酸盐	7
2.2 绿色硼酸盐荧光粉	10
2.2.1 掺杂三价铽 (Tb^{3+}) 的硼酸盐	10
2.2.2 掺杂二价铕 (Eu^{2+}) 的硼酸盐	13
2.3 蓝色硼酸盐荧光粉	15
2.3.2 掺杂三价铕 (Eu^{2+}) 的硼酸盐	15
2.3.2 掺杂三价铈 (Ce^{3+}) 的硼酸盐	18
3 结语	22
参考文献	23
致 谢	25

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