

研究简报

橙红色荧光粉 $\text{BaZnP}_2\text{O}_7:\text{Eu}^{3+}$ 的制备与发光特性

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摘要

采用高温固相法合成了 $\text{BaZnP}_2\text{O}_7:\text{Eu}^{3+}$ 荧光粉, 并对其发光性质进行了研究.

关键词 [发光二极管\(LED\)](#) [荧光粉](#) [Eu³⁺](#) [磷酸盐](#)

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Preparation and Luminescent Properties of $\text{BaZnP}_2\text{O}_7:\text{Eu}^{3+}$ Salmon Pink-emitting Phosphor

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Abstract $\text{BaZnP}_2\text{O}_7:\text{Eu}^{3+}$ phosphor was synthesized by a high temperature solid state reaction. The compound shows four major emission peaks locating at 588, 613, 622 and 654 nm that correspond to the $^5D_0-^7F_1$, $^5D_0-^7F_2$ and $^5D_0-^7F_3$ typical transition of Eu^{3+} , respectively. The influence of the concentration of Eu^{3+} ions on the emission intensity was investigated and the concentration quench did not occur. The role of charge compensation of Li^+ , Na^+ and Cl^- ions to the emission intensity was also studied. It was found that Li^+ ions gave the best improvement to enhance the intensity of the emissions. The results show that $\text{BaZnP}_2\text{O}_7:\text{Eu}^{3+}$ red-emitting phosphor is very suitable for white light emitting diode(w-LED) based on UV InGaN chip.

Key words [Light emitting diode\(LED\)](#) [Phosphor](#) [Eu³⁺](#) [Phosphate](#)

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