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Synthesis and PL Characterization of $Zn_4B_6O_{13}$: Eu^{3+} Phosphor

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Abstract: *Modified solid state synthesis had been used to synthesize $Zn_4B_6O_{13}$:Eu^{3+} phosphor. Compared to other methods, modified solid-state synthesis has several advantages.. $Zn_4B_6O_{13}$:Eu^{3+} phosphor's' photoluminescence properties have been investigated.. The PL excitation spectra shows sharp peak at 393nm due to transition of 4f→5d. The shoulder peak of the PL emission spectra is observed at 614nm due to the $5D_o$→ $7F_2$ (red) transition of Eu^{3+} ion while the other peak is observed at 593nm due to the $5D_o$→ $7F_1$ (orange). All of the properties of the developed $Zn_4B_6O_{13}$:Eu^{3+}phosphor indicate that it could be beneficial in the lamp industry and solid state lighting.*

Keywords: Phosphor, PL

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