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Thermoluminescent properties of $\text{Ba}_{1-x}\text{Mg}_x\text{Al}_2\text{O}_4:\text{Eu}^{2+}$ prepared by combustion method

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Abstract content
 (Max 300 words)

$\text{Ba}_{1-x}\text{Mg}_x\text{Al}_2\text{O}_4:\text{Eu}^{2+}$, Dy^{3+} phosphors prepared by combustion method at an initiating combustion temperature of 600 deg;C. The X-ray diffraction patterns of different compositions of the as-prepared were observed and the intensity of the peaks improved significantly after annealing the samples in air for 3 hours at 1000 deg;C. The SEM images of the samples with compositions $x = 0.0$ and 1.0 show the spherical nanoparticles of almost pure BaAl_2O_4 and MgAl_2O_4 respectively. The broad emission spectra shown by most of the samples can be attributed to the typical $4f65d1 - 4f7$ transition of the Eu^{2+} ions. The variable peak positions shown in most of the phosphors can be attributed to different composition of Mg ($x = 0.0 - 1.0$).

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