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## Thermoluminescent properties of BaAl2O4:Eu2+,Gd3+phosphors prepared by combustion method at different initiating temperatures.

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Europium (Eu2+) and gadolinium (Gd3+) doped BaAl2O4 powder phosphors were prepared by combustion method at different initiating temperatures (400-1000 oC), using urea as a comburent. The powders were annealed at different temperatures in the range of 400-1000 oC for 3 hours. X-ray diffraction data show that the crystallinity of the BaAl2O4 structure greatly improved as the annealing temperature increased. The FT-IR absorption bands observed at 533, 629 and 798 cm-1 for the samples annealed at higher temperatures (1100-1200 oC) are consistent with the stretching mode frequencies of BaAl2O4. Blue-green photoluminescence, with persistent / long afterglow, was observed at 503 nm.This emission was attributed to the 4f65d1-4f7 transitions of the Eu2+ ions. The phosphorescence decay curves were obtained by irradiating the samples with a monochromatized xenon lamp at an excitation wavelength of 393 nm.The glow curves and the decay curves of the samples irradiated by UV source (360 nm) were investigated using investigated using the Thermoluminescence Reader (Integral-Pc Based) Nucleonix TL 1009I.

## Level (Hons, MSc, <br> &nbsp; PhD, other)?

PhD

Consider for a student <br> &nbsp; award (Yes / No)?

No

## Would you like to <br>> submit a short paper <br>> for the Conference <br>> Proceedings (Yes / No)?

YES

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