

### Preparation of High brightness $\text{BaMgAl}_{10}\text{O}_{17}:\text{Mn}$ Green Phosphor particles with a spherical shape using a spray pyrolysis process

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Mn-doped barium magnesium aluminates ( $\text{BaMgAl}_{10}\text{O}_{17}:\text{Mn}$ , BAM:Mn) as a green phosphor for plasma display panels (PDPs) were prepared by spray pyrolysis. The content of Mn activator was optimized in terms of the brightness and the decay time. Also, in order to improve the luminescence intensity of BAM:Mn phosphor, some portion of magnesium was substituted by strontium. So, the emission intensity of BAM:Mn phosphor under vacuum ultraviolet (VUV) excitation was monitored with changing the amount of strontium and found to be maximum when the Sr content at a fixed Mn concentration was 30 at. % with respect to Mg element. It was observed that both the decay time and the color purity of BAM:Mn green phosphor could be improved by substituting Mg with Sr. We have also tried to further improve the luminescent intensity of BAM:Mn green phosphor, which was successfully achieved by the codoping of Eu. Finally, the optimized Mn-doped BAM green phosphor had higher photoluminescence intensity than that of commercial BAM:Mn particles as well as  $\text{Zn}_2\text{SiO}_4:\text{Mn}$  phosphor.