

SYNTHESIS AND CHARACTERIZATION OF $\text{Ca}_2\text{MgSi}_2\text{O}_7$ POSPHOR ACTIVATED BY Eu

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Alkaline earth silicates based-phosphors, $\text{M}_n\text{MgSi}_2\text{O}_{5+n}$ (M = Ca, Sr or Ba and n=1-2) have attracted interest of researchers due to their high efficiency as a host, excellent thermal and chemical stability and high brightness adding to their low cost. These phosphors showed great potential in various applications such as fluorescent lamps, white light emitting diodes, and display components. High temperature solid-state reactions are usually employed to synthesize those compounds. This paper proposes an alternative method of obtaining nanophosphor host based on $\text{Ca}_2\text{MgSi}_2\text{O}_7$ doped by Eu (CMS:Eu), a new long afterglow phosphor. Sol gel technique combined to a modified molten salt method was used. The resulted powder was calcined for 3h under an atmosphere of 5% H₂ /95% Ar. Phase identification by XRD and the measurements of photoluminescence (PL) and photoluminescence excitation (PLE) were performed. Single phased CMS:Eu with afterglow characteristics was prepared.