

Effect of  $\text{Si}_3\text{N}_4$  nanoparticles on photoluminescence properties of  $\text{Ca}_2\text{MgSi}_2\text{O}_7:\text{Eu}^{2+}$  phosphor particles prepared by spray pyrolysis

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$(\text{Ca}_{1-x}\text{Eu}_x)_2\text{MgSi}_2\text{O}_7$  phosphor particles were prepared by using a spray pyrolysis process. The photoluminescence properties were tailored by changing the silicon precursor. It was observed that the emission intensity of the prepared phosphor was greatly enhanced by using the silicon nitride instead of TEOS. A blue shift, however, occurred. The luminescent and particle properties of  $\text{Ca}_2\text{MgSi}_2\text{O}_7:\text{Eu}^{2+}$  phosphor particles were investigated by changing the preparation conditions.