

**SH-Synthesis of BaMgAl<sub>10</sub>O<sub>17</sub>:Eu<sup>2+</sup> Blue- Emitting Phosphor.  
Influence of Additives on the Emission Characteristics**

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BaMgAl<sub>10</sub>O<sub>17</sub>:Eu<sup>2+</sup> was prepared through a solid-state combustion reaction from the mixture of Ba(NO<sub>3</sub>)<sub>2</sub>, MgO, Al, Al<sub>2</sub>O<sub>3</sub> and Eu(OH)<sub>3</sub>. It was shown that the leading stage of combustion corresponds to the reaction between Ba(NO<sub>3</sub>)<sub>2</sub> and Al. From the XANES data, it was found that the divalent and trivalent europium coexisted in the SHS sample and trivalent europium was completely removed by decreasing the total oxygen content in the system. The XRD and PL spectra results indicate that a combustion temperature of about 2000-2100 K is the most favorable for BaMgAl<sub>10</sub>O<sub>17</sub> aluminate formation. Different chemical additives such as NaCl, SiO<sub>2</sub>, B<sub>2</sub>O<sub>3</sub> and Na<sub>2</sub>SiO<sub>3</sub> were introduced during the combustion for to improve the emission properties of BaMgAl<sub>10</sub>O<sub>17</sub>:Eu<sup>2+</sup>. The highest intensity was obtained in SiO<sub>2</sub> containing sample and the emission intensity of sample was increased up to the level of a commercial one.