Preparation and luminescent proportion of barium silicon oxynitride particles by spray pyrolysis

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Eu^{2+} -doped Barium silicon oxynitride phosphor particles were prepared by spray pyrolysis method and the luminescence characteristics were investigated. $(Ba_{2-x},Eu_x)SiO_4$ phosphor is a representative green phosphor for near-UV LED. In most cases, the nitride and oxynitride are prepared by a solid-state reaction. In this work, Eu2+ -doped barium silicate partially substituted with nitrogen was prepared by spray pyrolysis. With varying the preparation conditions, the luminescent properties were investigated. The $(Ba_{2-x},Eu_x)SiO_4$ phosphor has a green emission, whereas, the nitrogen-doped barium silicates showed a great red shift in the emission peak. More details were discussed.