Preparation and luminescence properties of (Sr/Ca)$Si_2O_2N_2$:Eu^{2+} phosphor by spray pyrolysis

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Phosphor is a key material for lamp and display devices. The technologies on light-emitting diode (LED) have a great attention in order to generate new white-light sources.
Eu2+ -doped Oxonitridosilicates were reported to have a good emission property under long-wavelength UV light. Conventionally, oxonitrodosilicates are prepared by solid-state methods. In this work, Eu^{2+} -doped (Sr/Ca)$Si_2O_2N_2$ particles ere prepared by spray pyrolysis and the luminescent characteristics were studied. The prepared MSi2O2N2 particles showed a green emission under long-wave UV and 450 nm blue light. It was found that the emission intensity was greatly enhanced by replacing strontium sites with calcium.