

Long-Persistent Luminescent $\text{MAl}_2\text{O}_4\text{:Eu;Dy}$ Phosphors Synthesized by Combustion

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Abstract : Phosphorescence, classically, excitation effects (radiation, electron beam, electric field, temperature, etc.) is the name given after the elimination of materials that glow in the visible region. This event continues to glow after the elimination of the effect of excitation is called phosphorescence. In this study were synthesized by the method of the combustion lanthanide doped alkaline earth aluminates. High temperature and long reaction time required and the sol-gel method of combustion according to the methods of solid state synthesis temperature lower than the short reaction time, a small particle size, convenience, and is superior in terms of being secured. Their microstructures and its effect on the photoluminescence properties were studied. Phosphorescence is derived in the dark when produced materials are held in sunlight or under ultraviolet light typically at 365-520 nm wavelength range. In this study, the optimal ratio of rare earth elements, in terms of brightness and glow duration was examined by SEM, XRD and photoluminescence analysis.

Keywords : persistence luminescence, phosphorescence, trap depth, combustion method

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