

**Study of The Effects of Varying The Concentration Of Aluminium on The Properties
of CaAl_2O_4 : Ce^{3+} Phosphors.**

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Abstract

Population increase has been observed in the past few years and as a result there is need for development in order to improve living standards of people. Lighting in homes and industries one of the major areas that needs to be improved. In the past few years electricity has been used as a source of lighting, however its high cost of production makes it expensive for use. Long afterglow phosphor materials have been studied as a substitute for the use of electricity. In this study effects of varying concentration of aluminum ion on the properties of CaAl_2O_4 : Ce^{3+} phosphor was determined. In particular the absorbance of CaAl_2O_4 : Ce^{3+} at different wavelengths prepared by solution combustion method were investigated. CaAl_2O_4 : Ce^{3+} phosphor was prepared by solution combustion method at 500°C . The samples obtained were then characterized using spectrophotometer to measure their absorbance. It is observed that the samples showed the highest absorbance at 400 nm wavelength.