



Phosphor Information Leaflet

GENERAL

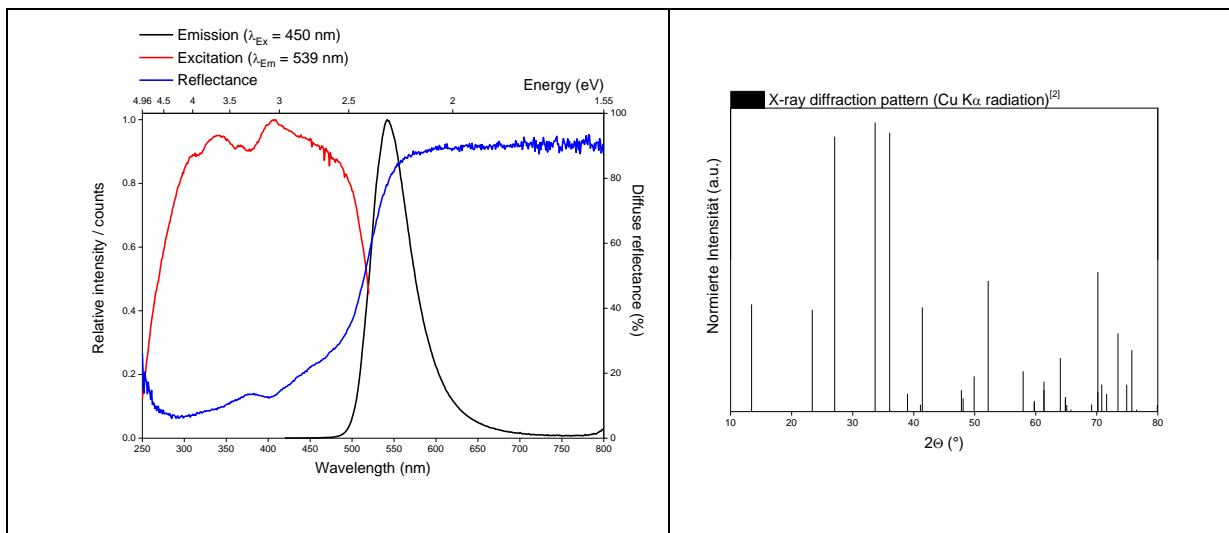
Name	Silicon aluminium oxynitride europium
Chemical formula	$\text{Si}_{(3-x)}\text{Al}_x\text{O}_x\text{N}_{(4-x)}:\text{Eu}^{2+}$
Application areas	Light emitting diodes
Optical transition	$[\text{Xe}]4f^7 (^8\text{S}_{7/2}) - [\text{Xe}]4f^65d^1$

OPTICAL PROPERTIES

Excitation maxima ($\lambda_{\text{Em}} = 539 \text{ nm}$)	406 nm (3.05 eV)
Emission maximum ($\lambda_{\text{Ex}} = 450 \text{ nm}$)	542 nm (2.29 eV)
Centroid wavelength	561 nm (2.21 eV)
FWHM	55 nm
Lumen equivalent	558 lm/W_{VIS}
CIE1931 chromaticity coordinates (x, y)	0.353, 0.625
Band edge of host lattice	6.2 eV ^[1]
Decay time $\tau_{1/e}$	~ 1 μs
$T_{1/2}$	> 500 K

PHYSICAL PROPERTIES

Body colour	Yellow
Density	3.2 g/cm^3
Refractive index (n_D)	2.0167 ^[3]
Mineral type	Nierite
Crystal system	Hexagonal
Space group (#)	P6 ₃ (173)





- [1] Teak D. Boyko, T. Gross, M. Schwarz, H. Fuess, A. Moewes. *J. Mater. Sci.* 8 (2014) 3242
- [2] PDF-4+ (ICDD) 04-016-3886
- [3] Refractive index database, refractiveindex.info