

Phosphor Information Leaflet

GENERAL

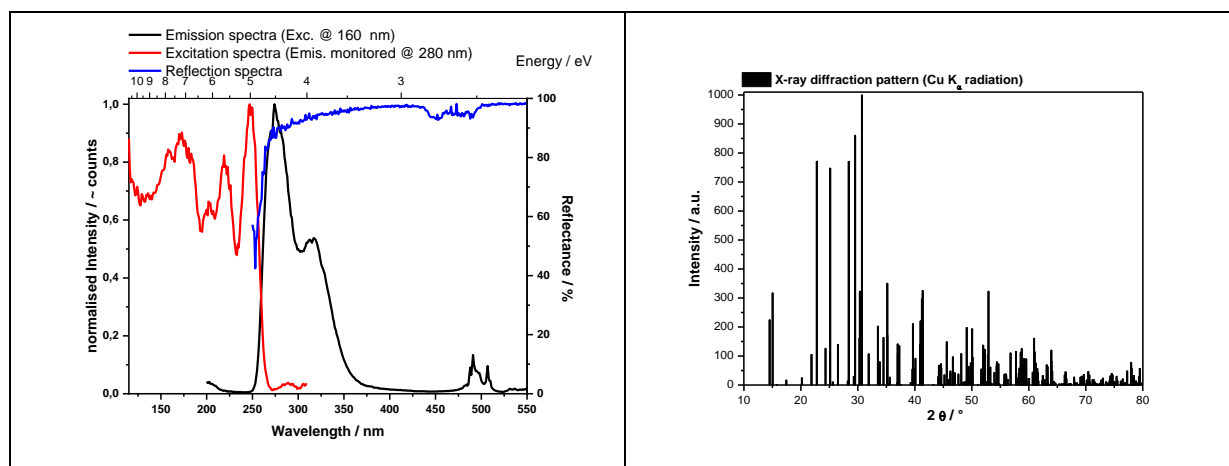
Name	Yttrium silicate praseodymium
Chemical formula	$Y_2SiO_5:Pr^{3+}$
Application areas	Scintillator, UV-C radiation sources
Optical transitions	[Xe]5f ² (³ P ₀) – [Xe]5f ² (³ H ₆) [Xe]5f ² (³ P ₀) – [Xe]5f ² (³ F ₂) [Xe]5f ² (³ P ₀) – [Xe]5f ² (³ H ₄)

OPTICAL PROPERTIES

Excitation maxima @ 280 nm	172 nm (7.2 eV), 219 nm (5.7 eV), 248 nm (5.0 eV),
Emission maximum @ 160 nm exc.	275 nm (4.5 eV), 315 nm (3.9 eV), 491 nm (2.5 eV)
Centroid wavelength	308 nm (4.0 eV)
Full width @ half emission maximum	60 nm
Lumen equivalent	168 lm/W _{VIS}
CIE1931 chromaticity coordinates (x, y)	0.150, 0.359
Band edge of host lattice	6.4 eV
Reflectance @ 254 nm	52 %
Decay time $\tau_{1/e}$	17 ns

PHYSICAL PROPERTIES

Body colour	white
Density	4.5 g/cm ³
Refractive index (at λ 589 nm)	1.82
Mineral type	-
Crystal system	Monoclinic
Space group (#)	C12/c1 (15)





RG TOM

Tailored Optical
Materials, Prof. Jüstel