

LGSO

Key Scintillator Materials for Novel Radiation Detectors

Features

- ✓ High light output
- ✓ Good energy resolution
- ✓ Fast decay
- ✓ High stopping power
- ✓ Good for TOF PET



LGSO ($\text{Lu}_x\text{Gd}_{(2-x)}\text{SiO}_5$)

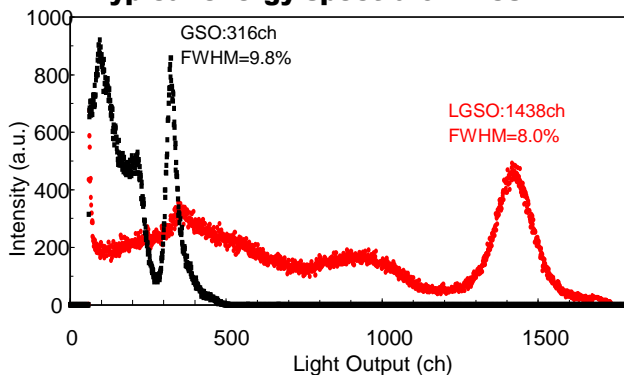
Applications

Positron Emission Tomography



Property

Typical energy spectra of ^{137}Cs



Comparison of Typical Scintillators

	LGSO	LSO	BGO	NaI:Tl
Light output (NaI=100)	80	80	12	100
Decay time (ns)	41	41	300	230
Peak wavelength λ_{em} (nm)	410	410	480	415
Density (g/cm^3)	7.3	7.4	7.13	3.67
Effective atomic number Z_{eff}	63	63	77	50
Hygroscopicity	No	No	No	Yes
Self-radiation	Yes	Yes	No	No
Temperature quench	-	-	-	-

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