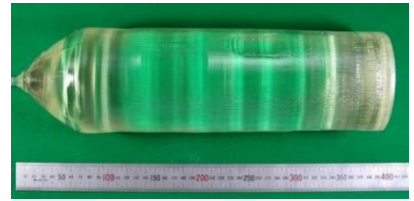


GSO/GSOZ

Key Scintillator Materials for Novel Radiation Detectors

Features

- ✓ **Good balance of all scintillation characteristics**
- ✓ **Good energy resolution up to 150°C**
- ✓ **Verity decay by Ce concentration**
- ✓ **Good radiation-hardness**
- ✓ **No radiation background**
- ✓ **Better transparency by Zr doping**



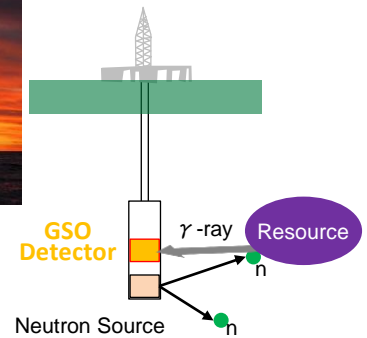
GSO ($Ce:Gd_2SiO_5$)

Applications

Positron Emission Tomography



Underground Resource Exploration



Comparison of Typical Scintillators

	GSO	GSOZ	LGSO	LSO	BGO	NaI:Tl
Light output (NaI=100)	20	24	80	80	12	100
Decay time (ns)	30-60	30-60	41	41	300	230
Peak wavelength λ_{em} (nm)	430	430	410	410	480	415
Density (g/cm^3)	6.7	6.7	7.3	7.4	7.13	3.67
Effective atomic number Z_{eff}	58	58	63	63	77	50
Hygroscopicity	No	No	No	No	No	Yes
Self-radiation	No	No	Yes	Yes	No	No
Temperature quench	150°C	150°C	-	-	-	-

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