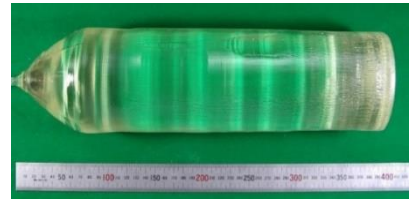


GSO/GSOZ

Key Scintillator Materials for Novel Radiation Detectors

Features

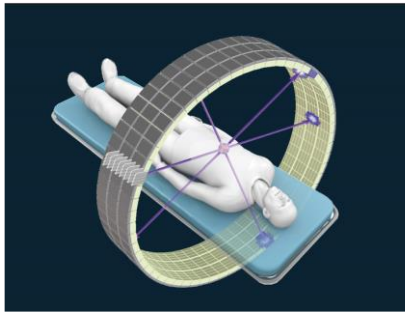
- ✓ Good balance of all scintillation characteristics
- ✓ Good energy resolution up to 150°C
- ✓ Verity decay by Ce concentration
- ✓ Good radiation-hardness
- ✓ No radiation background
- ✓ Better transparency by Zr doping (GSOZ)



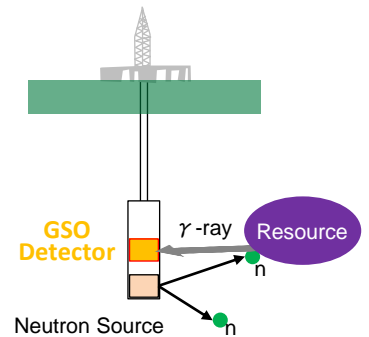
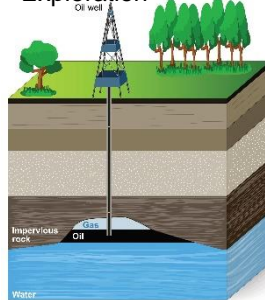
GSO (Ce:Gd₂SiO₅)

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	~42	~42	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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