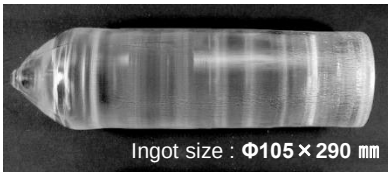
GSO/GSOZ

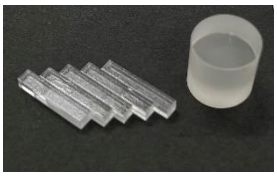
Key Scintillator Materials for Novel Radiation Detectors

Features

GSO （Ce-doped Gd_2SiO_5）

- ✓ Good scintillation characteristics up to 150ºC
- ✓ Decay time can be varied by changing the Ce concentration
- ✓ Excellent radiation resistance
- ✓ No hygroscopicity
- ✓ No self-radiation



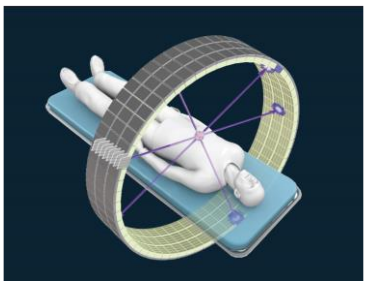


GSOZ （Zr, Ce-doped Gd_2SiO_5）

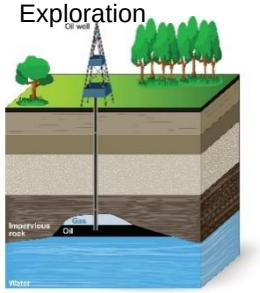
- ✓ Larger light out than GSO
- ✓ Other characteristics are equivalent to GSO

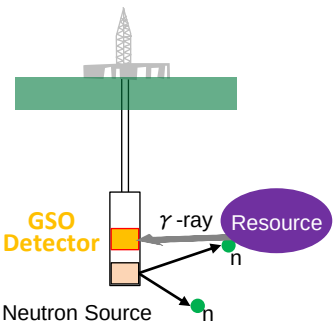
Applications

Positron Emission Tomography



Underground Resource Exploration





Comparison of Typical Scintillators

	GSO	GSOZ	LGSO	LSO	BGO	NaI:Tl
Light output (NaI=100)	20	24	～90	～90	12	100
Decay time (ns)	30～60	30～60	40～42	40～42	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	7.4	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

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Contents are things of 13-October-2023.