

NEW

GPS

Key Scintillator Materials for Novel Radiation Detectors

Features

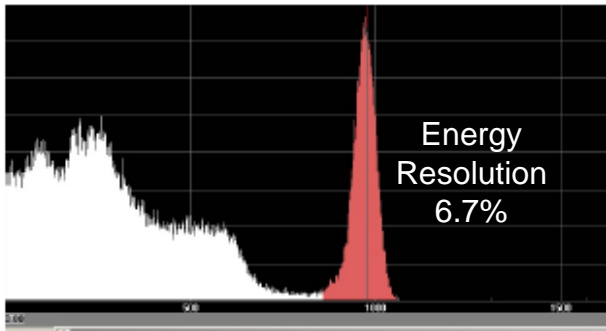
- ✓ Highest light yield in oxide scintillators
- ✓ Excellent temperature characteristics
- ✓ No hygroscopicity
- ✓ No self-radiation

Applications

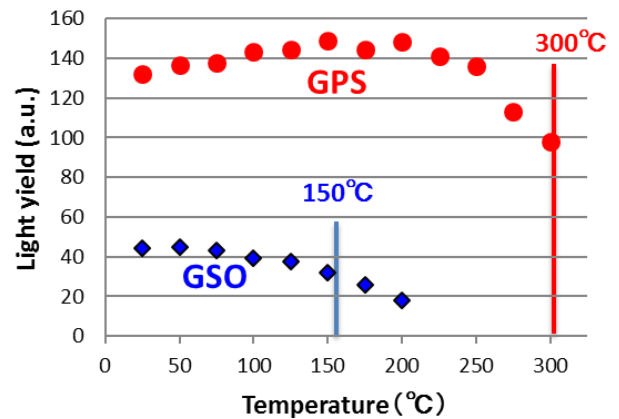
- ✓ Oil well logging
- ✓ SPECT
- ✓ Homeland security
- ✓ Common radiation monitoring

Properties

Energy spectrum



Temperature response



Comparison of typical scintillators

	NaI:Tl	GSO	GPS	La-GPS
Light yield (NaI=100)	100	20	~140	~120
Decay time (ns)	230	30-60	50-130	50-70
$\Delta E/E$ (^{137}Cs , %)	7	8-10	5 - 7	5 - 6
Density (g/cm ³)	3.7	6.7	5.5	~5.3
Hygroscopicity	Yes	No	No	No
Self-radiation	No	No	No	Little
Temperature quench	×	150°C	300°C	>150°C



GPS
Gadolinium pyro
silicate
(Ce:Gd₂Si₂O₇)

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