PRL Scintillator

28. Nov, 2024

Proterial, Ltd.

Yamazaki Works,

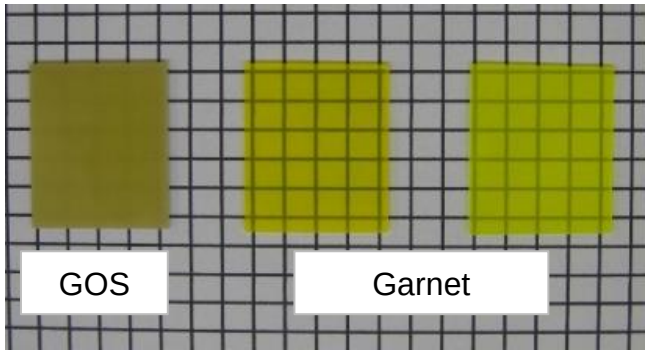
Power Electronics Materials Business Unit,

Products of PRL Scintillator

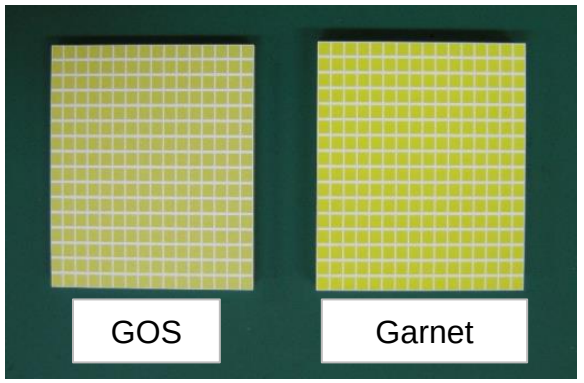
PROTERIAL

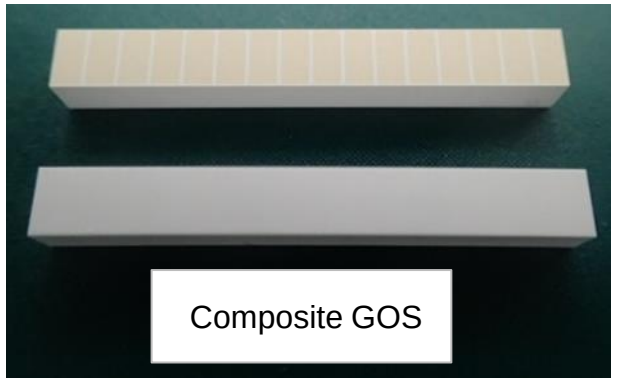
Material	Situation	Feature
GOS(Gd_2O_2S) LS7/LS5/LS2	Mass Production ＜No.1 share in WW for medical systems＞	LS-7: Standard product LS-5: Higher light output and higher afterglow than LS-7
Garnet SX101/SX102/ Others	Mass Production for SX101&102 Others are under development	SX101（YGAG): High transparency, Low density, suitable for dual energy detection system SX102（GGAG): High transparency, High density
Composite GOS	Ready for Mass Production	Low Cost (50% of GOS, depending on its shape)

＜Substrate＞



＜Array＞





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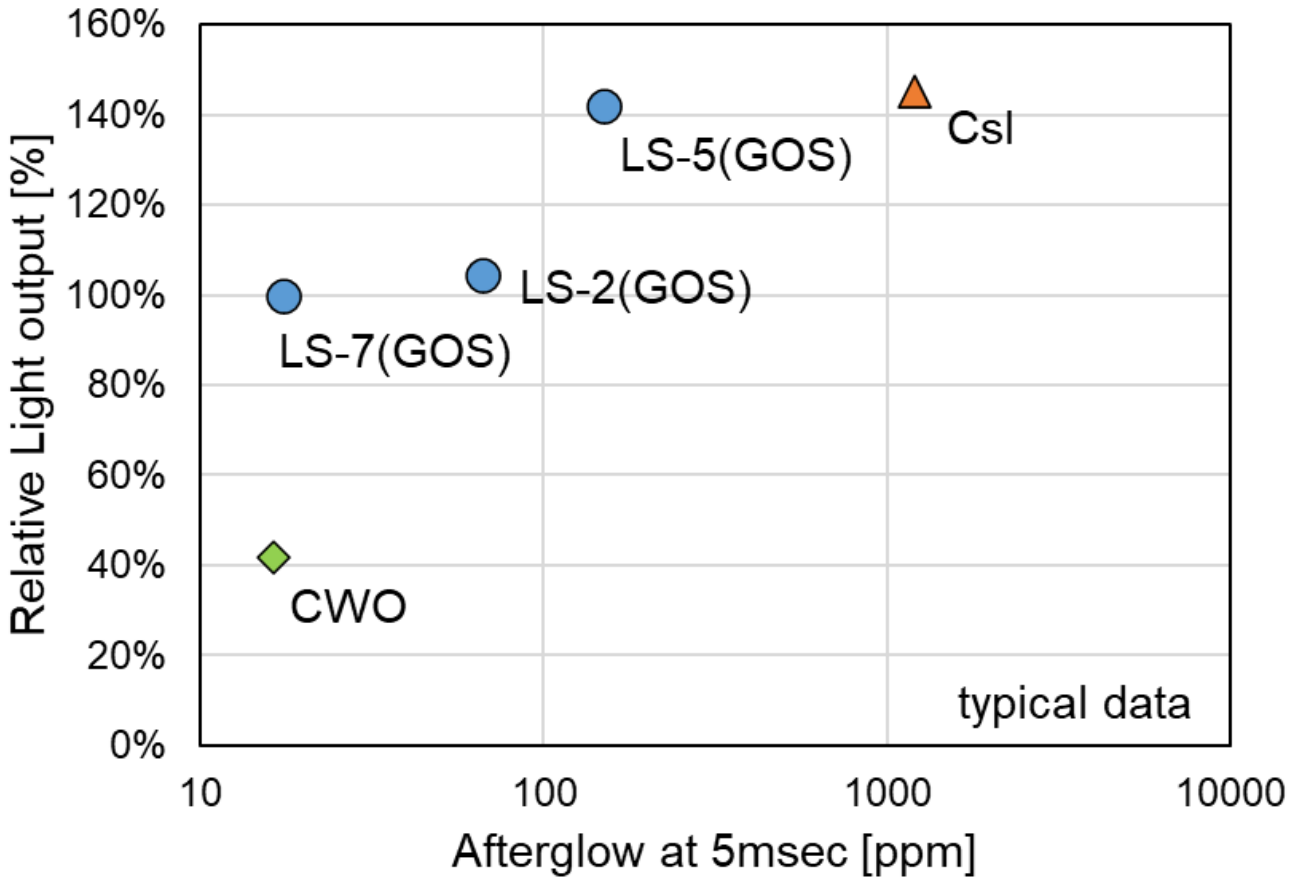
Feature of LS-series (GOS Scintillator)



1. High Sensitivity & Low afterglow

LS Series is a product that achieves both high sensitivity and low afterglow, with higher sensitivity than CWO and lower afterglow than CsI.
It contributes to the improvement of image quality in radiation detectors.

2. High X-ray stopping power

LS-series has high X-ray absorption coefficient.

3. Higher uniform sensitivity

LS series is a ceramics scintillator and has higher uniform sensitivity than single crystal scintillator.

4. Eco-friendly material

LS-series does not include Cd or any environmental pollution material.

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Properties of LS-series (GOS scintillator)

PROTERIAL

Product	LS7	LS5	LS2	Not our company products		Note
Composition	GOS:Pr	GOS:Tb	GOS:Pr	CsI:Tl^+	CWO	
Light Output [% vs LS7]	100	142	104	145	42	Measurement value in our company
Afterglow at 5ms [ppm]	17	150	66	1205	16	Measurement value in our company
Decay time [ns]	3,000	～ms	～ms	680	5,000	Literature value (ISBN 978-4-86476-245-8)
Density [g/cm^3]	7.3	7.3	7.3	4.5	7.9	Literature value (ISBN 978-4-86476-245-8)
Peak Emission [nm]	512	544	544	540	470	Literature value (ISBN 978-4-86476-245-8)
X-ray Stopping [cm^{-1} at 100keV]	19	19	19	9.2	22	Calculation value in our company
Hygroscopicity	None	None	None	Yes	None	Literature value (ISBN 978-4-86476-245-8)
Rohs/Reach Material	Compliance	Compliance	Compliance	Compliance	Cd	Rohs 2018

Please contact us for the properties of garnet and composite GOS.

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PROTERIAL