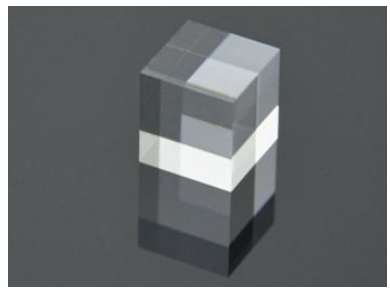
LYSO(Ce) Scintillators

Cerium-doped silicate yttrinm lutetium (or Ce:LYSO) crystal is a Cerium doped lutetium based scintillation crystal, it is a new type of scintillation materials which has excellent properties: high density, short decay time, high light output, anti-radiantion hardness, and stable chemical and physical properties. LYSO(Ce) is ideal for applications that require higher throughput, better timing and energy resolution, including time-of-flight PET machines.
Hangzhou Shalom EO offers the customized blanks, polished elements, scintillation screens and arrays made of LYSO(Ce) crystals upon customer's request.



Features:

- High light output
- High density and anti-radiation hardness
- Short decay time
- Stable chemical and physical properties

Ability:

- Growth method: Czochralski
- Formula: $Lu_{1.9}Y_{0.1}SiO_5$(Cerium content: 0.5mol%)
- Maximum Diameter: φ 105mm
- Maximum Lenght: 200m
- Available items: single crystals and arrays

Basic Properties:

Basic Properties	
Melting Point (℃)	2070
Density (g/cm^3)	7.2
Hygroscopic	None
Hardness (ns)	5.8
Wavelength of emission max. (nm)	410

Addr. Room A1031, Boke Mansion, No.9 Xiyuan Road, Xihu District, Hangzhou 310030, China.
Tel:+86-571-87920630 Fax:+86-571-87603342 E-mail:sales@shalomeo.com Home:www.shalomeo.com

Refractive index @ emission max	1.82
Decay time (ns)	<40
Energy Resolution (%)	8.0
Light yield (photons/MeV)	25000
Anti-radiation (rad)	$>1x10^8$
Photoelectron yield (% of NaI(Tl)) (for γ-rays)	75

Note: The boules, blanks, polished elements and scintillator arrays are available.

Basic Properties of LYSO(Ce) Comparing to Other Scintillation Materials

Materials	Emission Peak Wavelength (nm)	Light Yield (photons/MeV)	Decay Time (ns)	Density (g/cm^3)	Photoelectron Yield (% of NaI(Tl))
LYSO(Ce)	420	25000	40	7.2	75
CaF2(Eu)	405/435	24000	940	3.18	50
CsI(Tl)	550	17100	1000	4.51	45
BGO	480	8200	300	7.13	8
PbWO4	560		50	8.3	0.1
CdWO4	470/540		900-20000	7.9	20
BaF2	310/325	1800/9950	0.6/620	4.9	5/16
LYAP	384	12000	20	7.43	35

Application Notes:

- Positron emission tomography (PET)
- Medically X-ray CT
- High energy physics
- Nuclear medicine
- Nuclear radiation scanner
- Geological prospecting
- Radiation detector
- Radiation Monitoring Systems
- Gamma pulse spectroscopy

Addr. Room A1031, Boke Mansion, No.9 Xiyuan Road, Xihu District, Hangzhou 310030, China.
Tel:+86-571-87920630 Fax:+86-571-87603342 E-mail:sales@shalomeo.com Home:www.shalomeo.com