



BGO($\text{Bi}_4\text{Ge}_3\text{O}_{12}$) is a scintillator material that can emit green fluorescent light with a peak wavelength of 480 nm. With its high stopping power, high scintillation efficiency and good energy resolution, BGO has been found a wide range of applications in high energy physics, medicine, geological exploration.

Basic Information

- Growth technique: Bridgman
- Formula: $\text{Bi}_4\text{Ge}_3\text{O}_{12}$
- Dimension(max): $\varnothing 50 \text{ mm} \times 300 \text{ mm}$, $40 \text{ mm} \times 80 \text{ mm} \times 280 \text{ mm}$
- Achieved items: single crystal, linear and 2 dimensional array

General Properties

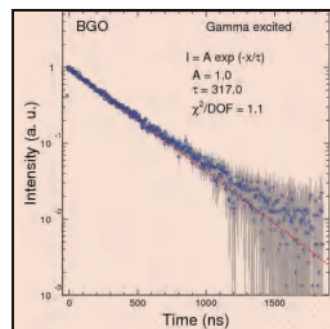
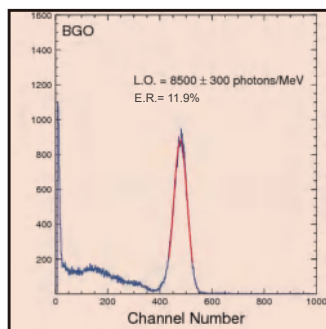
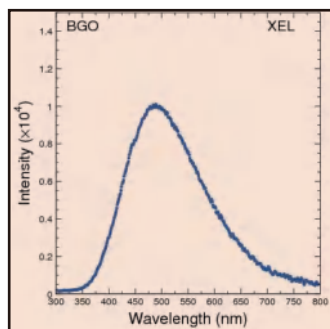
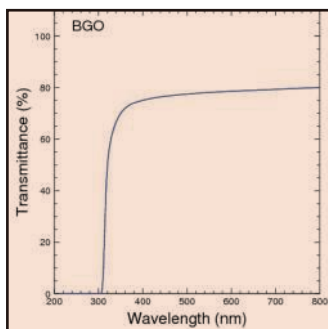
Density(g/cm^3)	7.13
Melting point(K)	1,323
Wavelength of emission peak(nm)	480
Light output(Photons/Mev)	8,500
Decay time(ns)	317
Cleavage plane	No
Hygroscopic	No
Refractive index	2.15
Hardness(Mho)	5

Characterization

Dimension of BGO: $\varnothing 25 \times 25 \text{ mm}$

PMT: R1306; Reflector: Teflon(0.80 mm); Radiation source: Cesium¹³⁷; HV: 650V

Absolute value of light output : 8,500 photons/Mev; Energy resolution: 11.9%; Decay time: 317 ns



Scintillation decay curve by gamma ray excited

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