Yb:GGG

DESCRIPTION

CRYLINK's Yb:GGG crystal product, also known as Ytterbium-doped Gadolinium gallium garnet (Yb:$Gd_3Ga_5O_{12}$). It is a kind of laser crystal product with excellent comprehensive performance. It is widely used in high power laser, semiconductor laser, LD pump fields. The product has the characteristics of high doping concentration, wide absorption band and low quantum defect. It can be used in ultra-short pulse laser, high power and high efficiency solid laser, ultra-short pulse laser, semiconductor laser products.

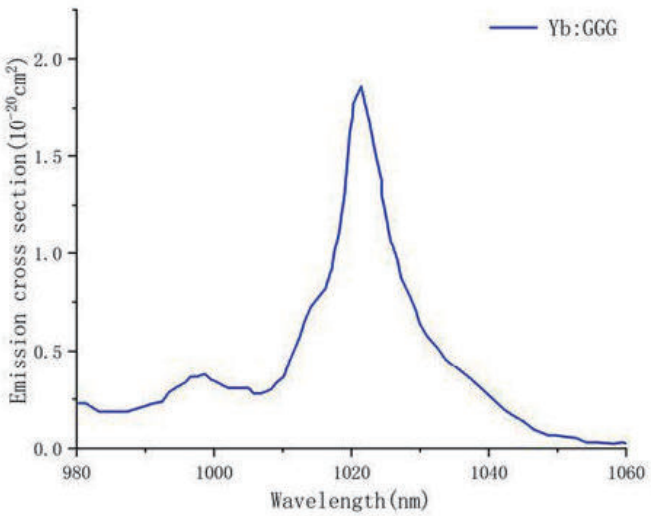
FEATURES

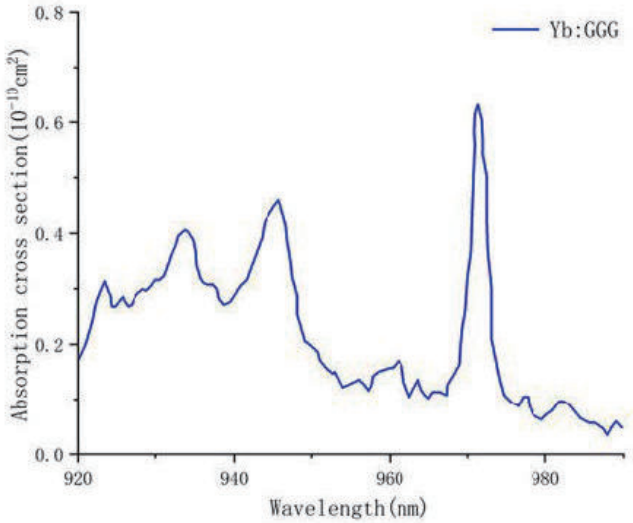
- High-efficiency laser output
- Straight polarization laser emission
- Good physical and chemical performance
- The highest local absorption is in the infrared region

APPLICATIONS

- Semiconductor lasers
- Thin-film laser oscillator
- Diode pump Yb:GGG laser
- High-power solid-state lasers

SPECTRA





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Yb:GGG

PARAMETERS

PRODUCT PARAMETERS

Chemical formula	$Yb:Gd_3Ga_5O_{12}$
Crystal structure	Cubic, Ia3d
Lattice parameters	12.38 Å
Zero-phonon line (ZPL)	971nm
σ_{abs} (ZPL)	6.6×10^{-25} cm^2
Broadband absorption	930 nm – 950 nm
Peak emission wavelength(EW)	1021nm
σ_{em} (EW)	1.9×10^{-24} cm^2
$\Delta\lambda_{emission}$ (FWHM at inversion ~10%)	8nm
Quantum defects	0.8
Thermal conductivity, κ (5 at.%)	7.8 W/m/K
κ (15 at.%)	7.7 W/m/K
Coefficient of thermal expansion	$8\times10^{-6}\cdot K^{-1}$
dn/dT	$21.2\times10^{-6}K^{-1}$
α_T	$8.5\times10^{-6}K^{-1}$
Mohs hardness	7.5
Melting point	1750℃