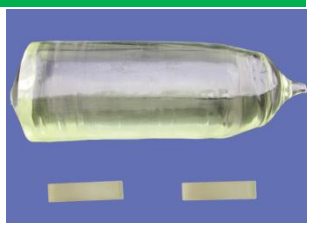
Tm:YAP：



Tm:YAP crystal is one of the most important crystals for LD pumping to emit 2um band laser, with excellent physical and chemical properties . The anisotropy in the structure of the Tm:YAP material makes the emission section also anisotropic, and the Tm:YAP crystals with different orientations have different laser functions, output wavelengths and operating forms .

Compared with the physical and chemical properties of Tm:YAG, the 795nm pump absorption band of Tm:YAP crystal matches the emission wavelength of commonly used high-power AlGaAs diodes better, and its pump absorption bandwidth is 4nm wider than that of Tm:YAG crystal, with higher efficiency , and directly output linearly polarized light.

Tm:YAP crystals are widely used in medical, communication and other fields.

Main features :

Excellent physical and chemical properties

2mm band laser output efficiency is higher than Tm:YAG

Directly Linearly Polarized Light Output

LD pump absorption bandwidth is 4nm wider than that of Tm:YAG crystal

The 795nm pump absorption band matches the emission wavelength of commonly used AlGaAs diodes better

Material properties:

Lattice constant	a = 0.518 nm , b = 0.532 nm c = 0.736 nm
Melting point	1870 °C
Density	5.35 g/ cm^3
Moh's hardness	8.5
Specific heat capacity	400 J/(kg ·K)
Thermal conductivity	11W/(m·K)
Coefficient of thermal expansion	a-axis: 9.5x 10^{-6} /K; b-axis: 4.2 x 10^{-6} /K ; c-axis: 10.8x 10^{-6} /K
Refractive index	na=1.91 , nb=1.92, nc=1.94
Thermo-optic coefficient	dn a /dT=9.7 x 10^{-6} /K ; dn c /dT=14.5 x 10^{-6} /K

Product parameters:

Doping concentration	Tm: 0.2~15at%
Orientation	[010] or [100] ±5°
Crystal size	Diameter 2~10mm, length 2~100mm , can be customized
Wavefront distortion	≤0.125l/25mm @632.8nm
Extinction Ratio	≥25dB
Dimensional tolerance	Diameter: +0.00/-0.04, length ±0.5mm
Cylindrical processing	Grinding or Polishing
Parallelism of end faces	≤10"
Perpendicularity between end face	≤5′
Flatness of end face	l/8 @632.8nm
Surface finish	10/5 (MIL-O-13830A)
Chamfer	0.15±0.05mm
AR Coating Reflectance	≤0.25%