Er:Cr:YSGG

Introduction

Er:Cr:YSGG (Erbium，Chromium doped Yttrium Scandium Gallium Garnet) provides an efficient laser crystal for generating 2800nm light in an important water absorption band. It becomes one of the most promising laser crystals recently owing to its high conversion efficiency，stable chemical properties，long fluorescent lifetime. Now Er:Cr:YSGG is widely used in dentistry，environmental researching，optical communication，remote sensing technology and military etc.

Advantages of Er:Cr:YSGG

- Lowest threshold and highest slope efficiency of common Erbium doped crystals；
- High conversion efficiency；
- Operates CW, free-running or Q-switched；
- High optical quality；
- The intrinsic crystal disorder increases pump line widths and tenability；
- Can be flash lamp pumped via Cr bands or diode pumped via Er bands；
- Long fluorescent lifetime.

Table1. Basic Properties of Er:Cr:YSGG

Crystal structure:	Cubic，Garnet
Growth Method:	Czochralski
Chemical formula:	$Y_{2.93}Sc_{1.43}Ga_{3.64}O_{12}$
Lattice constant:	12.42 Å
Doping content(at/cm^3):	Cr:0.5×10^{20}，Er:4×10^{21}
Density:	5.67g/cm^3 (Cr & Er doped)
Refractive index:	1.92 at 1000nm
Thermal expansion coefficient:	8.1x10^{-6} /K
Thermal conductivity (W/mK):	8
Hardness（Mohs）:	8
Thermo-optical factor(dn/dT)(10^{-6} /K):	12.3
Emission cross-section(cm^2):	5.2×10^{-21}
Fluorescent Lifetime:	1400 μs

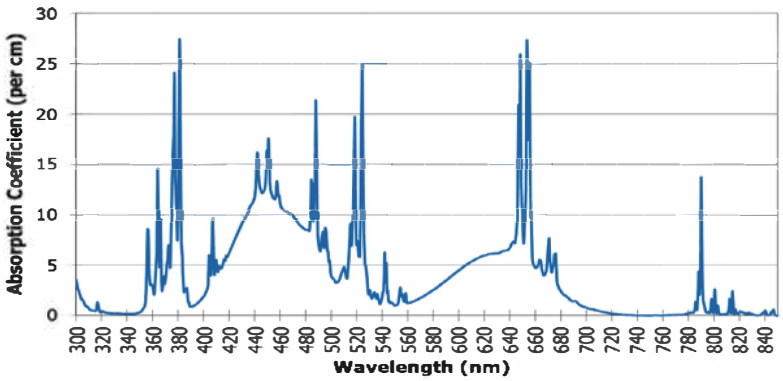

Figure1. Cr:Er:YSGG Absorption Coefficient

公司简介
INTRODUCTION

CASTECH INC. (CASTECH) was founded by Fujian Institute of Research on the Structure of Matter, Chinese Academy of Science in 1988. Thanks to long term interactive partnership with the leaders in laser system manufacturing industry and ongoing efforts of our employees, we have established the largest mass production lines in the world for LBO,BBO,Nd:YVO_4 and TGG crystals, and implemented a complete quality control system for our products.

CASTECH is now a worldwide leading supplier of nonlinear optical crystals,laser crystals,precision optics, and a variety of laser components. In CASTECH, there are Flux/Czochralski/Water Solution/Bridgman Crystal Growth production lines, Crystal Orientation and Dicing workshop, Optical Polishing workshop and Optical Coating workshop with IBS, IAD, MS and EB coating technique. Our commitments are backed by our huge manufacturing capacity.

CASTECH's quality system is IATF 16949:2016 and ISO 9001:2015 certified. We have established a complete system for outgoing parts inspection. Our optical testing equipments include Zygo Interferometers, Agilent Cary 7000, Perkin-Elmer Lambda 950, Nikon Microscope, Photo-Thermal Common-Path Interferometers, Zygo Newview 8300, Taylor Hobson LuphoSan 260, Extinction Ratio Measurement and Ellipsometers.These equipments along with many others, ensure that we comply with all specifications for our products.

Today, over 60% of CASTECH's products are exported to USA, Japan, Europe and other Asia Market. We have established a global sales network. We have set up our agencies and distributors in the main industrial countries and districts.

Our mission is to deliver the best products and solutions to our customers in photonics industry, and help them to realize their full potential in business. Here at CASTECH, we value comity, integrity, honesty, and innovation.