

Chromium Doped Yttrium Aluminum Garnet Crystal (Cr⁴⁺:YAG)

Introduction

Cr⁴⁺:YAG Crystal is an excellent crystal for passively Q-switching diode pumped or lamp-pumped Nd:YAG, Nd:YLF, Nd:YVO₄ or other Nd and Yb doped lasers at wavelength from 0.8 to 1.2 μm. Because of its chemically stable, durable, UV resistant, good thermal conductivity and high damage threshold (> 500 MW/cm²) and being easy to be operated, it will replace traditional materials, such as LiF, organic Dye and color centers.

CASTECH provides Cr⁴⁺:YAG with Cr⁴⁺ doping level from 0.5mol% to 3mol%. The size could be from 2×2mm² to 14×14mm² with length from 0.1mm to 12mm available. We can control the initial transmission from 10% to 92% according to customers' requirements.

Basic Properties of Cr⁴⁺:YAG

Crystal Structure	Cubic
Dopant Level	0.5 mol% ~ 3 mol%
Hardness	8.5
Damage Threshold	> 500 MW/cm ²
Refractive Index	1.82 @ 1064 nm

The preliminary experiments of CASTECH's Cr⁴⁺:YAG showed that the pulse width of passively Q-switched lasers could be as short as 5ns for diode pumped Nd:YAG lasers and repetition as high as 10kHz for diode pumped Nd:YVO₄ lasers. Furthermore, an efficient green output @ 532nm, and UV output @ 355nm and 266nm were generated, after a subsequent intracavity SHG in KTP or LBO, THG and 4HG in LBO and BBO for diode pumped and passively Q-switched Nd:YAG and Nd:YVO₄ lasers.

Cr⁴⁺:YAG is also a laser crystal with tunable output from 1.35 μm to 1.55 μm. It can generate ultrashort pulse laser (to fs pulsed) when pumped by Nd:YAG laser at 1.064 μm.

Note:

When ordering Cr⁴⁺:YAG crystal, please specify the size, initial transmission and coatings. For further information, please contact CASTECH.

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:YVO₄ 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 LupoSan 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.