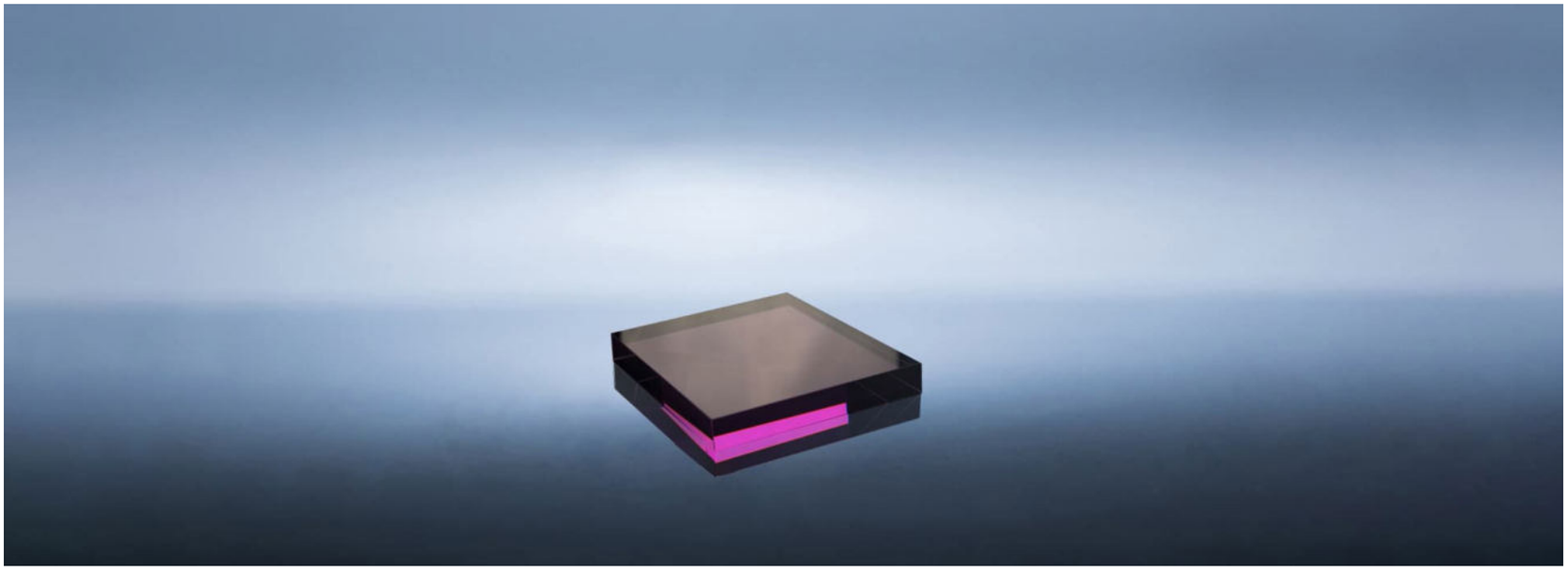
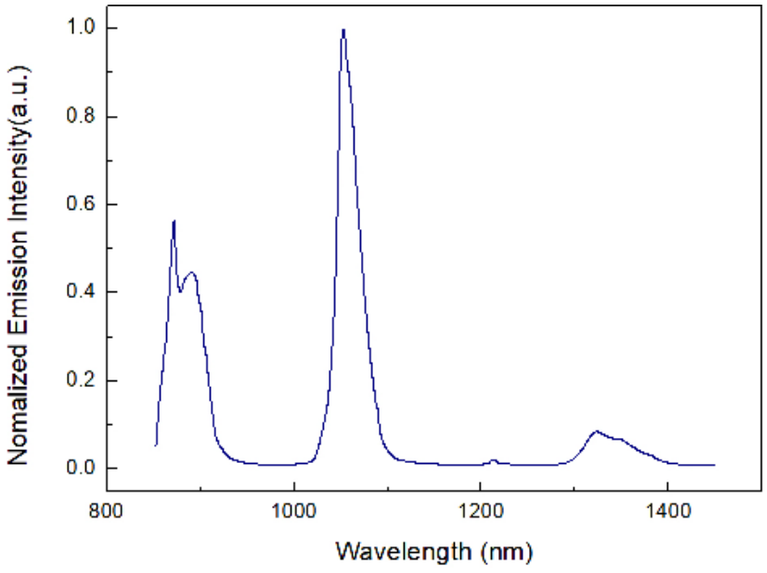
NF Nd:Glass

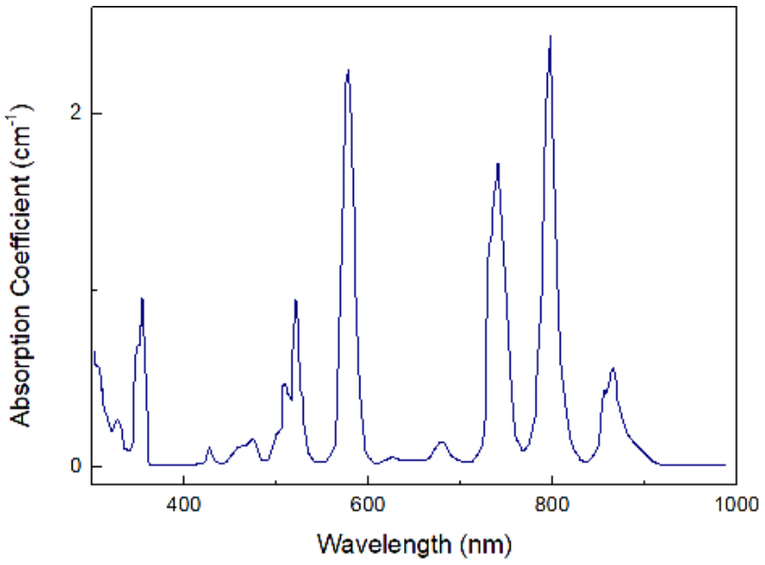


DESCRIPTION

Nd-doped Fluorophosphate glass has the characteristics of low nonlinear coefficient, high fluorescence lifetime, easy large-scale preparation, excellent glass forming performance and good crystallization stability, and meets the requirements for energy storage and amplification of high-energy laser systems. Two kinds of NF glass.

SPECTRA





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PARAMETER

Laser Specifications

model	NF1	NF2
NdF3 (wt%)	0.88	1.07
Nd3+conc.(1020ions/cm3)	0.2±0.1	1.2±0.1
Cross section for stimulated emission(10-20cm2)	2.7±0.1	3.4±0.1
Lifetime at 1053nm(μsec)	≥515(NdF3:0.53wt%)	≥430(NdF3:0.53wt%)
	≥495(NdF3:1.07wt%)	≥410(NdF3:1.07wt%)
Effective bandwidth(nm)	32.8	30.4
Fluorescence peak wavelength(nm)	1053	1053
Absorption coefficient(cm-1)	≤0.001(1053nm)	≤0.001(1053nm)
	≤0.04(400nm)	≤0.04(400nm)
	≤0.08(3333nm)	≤0.08(3333nm)

Thermal Specifications

	NF1	NF2
Transformation temp.(℃)	450	490
Softening temp.(℃)	491	528
Coeff. of linear thermal expansion(10-7/K)(50~100℃)	152	142
Thermal coeff. of optical path length(10-6/K)(50~100℃)	-1.86	-1.2
Thermal conductivity(25℃)(W/mK)	0.865	

Optical Specifications

model	NF1	NF2
Non-linear refractive index coeff.n2(×10-13e.s.u)	≤0.6	≤0.86
Refractive index(1053nm)	1.464±0.003	1.514±0.003
Abbe value	88	77
dn/dT	-8.84	-8.6

Other Specifications

	NF1	NF2
Density(g/cm3)	3.65	3.68
Young's modulus(G Pa)	73	76
Knoop hardness(kg/cm2)	343	423
Fracture toughness(MPa·m1/2)	0.35	0.58

FEATURES

- Low nonlinear coefficient
- High fluorescence lifetime
- Good glass forming performance
- Good crystallization stability
- High coefficient of thermal expansion

APPLICATIONS

- Laser amplifiers
- Microstructured optical fiber laser(MOF)
- High average power laser
- High-energy laser fusion system

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