	Name: Vidhl Shah Keg. No: 21BCE1297 Slot: E2+TE2
	Page No.
	BPHYIOIL - DA3
h	NII NAS I
#	Nd-YAG LASER
	PALE OF THE ACTUAL PROPERTY OF THE PARTY OF
-	Nd- YAG Stands for Neodymeum - Ythrium Aluminium
	Grarnet. Nd is a rare earth metal when doped with
	solid state enistals andress a sie
	solid state crystals produce emission of 1 um.
	All Mar 9 - 101 1 1 1
•	Nd- YAG Ps a solled State laser:
-	Also called doped insulator lasers.
-	Electronécally non-conducting. Active centers are dispersed in a dielectric crystal
-	Active centers are dispersed in a dispertie constal
	or piece of alace
_	Crustal atom da not particion to en la la la la
	or piece of glass. Crystal atom do not participate in lasing a ction but act-
	as host lattice to active centers.
	11 1 0 1
•	Working Principle:
-	It is a four level laser-pumping achieved by xenon flash
	lamp.
-	lamp. Nd3+ ions take place of ythium ions. Doping concentration- is of 0.725% by weight - 1.4×10 ²⁶ atoms per m3.
	is of 0.725% by weight - 1.4x1026 atoms per m3.
	Two primary pump bands are in energy 7000-8500 A
	The sector NIA+38 on form the around the to moville to
	It excites Nd+3 fons from the ground state to multiple
	energy states of En. Nd3+ Pons are active medium.
-	The exulted Nd3+ ions quickly decays to the metastable
	upper state laser level Ez by releasing excess energy to
	lattice.
-	Example he populated by Nd3+ Pons since it is 0.25eV
	E, connot be populated by Nd3+ Pons since It is 0.25eV above ground state. Therefore sporsely populated at normal
	Open how to be now I see
	Theratina temperature.
	Population inversion achieved between E3 and E2 levels. In E3 State, Nd3+ions, emit 1.06 mm wavelength and drop
-	In 13 State No ions emit 1.06 um Wavelength and drop
	V Company of the Comp

to lower level laser E2. - To get continuous output - tungsten hallde incadescent lamps are used. - It operates in pulsed/continuous mode. Group of Fast (Non-radioaction) Transitions optical Laser Transitions Pumping 0.5 0.0 Energy Levels Constructions - Length of the Nd: YAG laser rod is 5cm to low and - Laser rod and 19 near flash lamp - elleptical reflector cavity. - Ends of rod are polished and made optically flat and - Optical cavity - Silvering two ends or using 2 external mirrors. One is 100% reflecting other is partially reflecting - System cooled by water or air circulation.

ANTIREFLECTION Nd: YAG Cylinder Godfing on ands HR Parron Excite Owlput rod (T=7-5%) CONSTRUCTION OF Nd: YAG LASER