

# Diode Pumped Solid State Lasers Mit Lincoln Laboratory

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### Diode Pumped Solid State Lasers

#### **Diode-Pumped Solid State Lasers - MIT Lincoln Laboratory**

Diode-Pumped Solid State Lasers Schematic of the first diode-pumped solid state laser This laser used five pulsed GaAs diode lasers to pump the U<sup>3+</sup>-doped CaF<sub>2</sub> laser rod that was 3 mm in diameter and 4 cm long The laser mirrors were coated directly on the ends of the rod

#### **An Overview of Diode Pumped Solid State (DPSS) Lasers**

Diode pumped solid state (DPSS) lasers are solid state lasers made by pumping a solid gain medium, for example, a ruby or a neodymium doped yttrium aluminum garnet (YAG) crystal, with a laser diode DPSS lasers have advantages in compactness and efficiency ...

#### **Diode-Pumped Solid-State Lasers: Next Generation Drivers ...**

“Diode-Pumped Solid-State Lasers: Next Generation Drivers for Inertial Fusion Energy and High Energy Density Plasma Physics” Camille Bibeau, Christopher D ...

#### **Diode Laser-Pumped Solid-state Lasers - Stanford University**

output from several diode lasers to provide greater average power than is available from a single diode laser The diode laser-pumped solid-state laser can operate at a variety of wavelengths not accessible with diode lasers The diode laser-pumped solid-state laser line-width is fundamentally orders of magnitude less than that of the

#### **Diode-end-pumped solid-state lasers**

construction, operation and advantages of diode lasers It is motivated that diode-end-pumping solid-state lasers produce laser systems with the highest efficiency and diffraction limited beam quality It is, however, emphasised that power scaling of diode-end-pumped solid-state lasers is problematic due to

#### **High brightness diode-pumped organic solid-state laser**

(LED) enabled several teams to report on diode-pumped and LED-pumped OSSs, thus demonstrating true low-cost systems<sup>7-12</sup> Nevertheless, as the peak power of laser diodes (and all the more LEDs) is weak compared to the values achieved with pulsed solid-state ...

### **8 Powering solid-state lasers 20SEP11 - Kigre**

Diode Pumped Solid-State (DPSS) lasers, including fiber lasers, are now widely used in the industry DPSS lasers replace the gas tube arc lamp or flashlamp with a semiconductor diode laser as a pump source Advantages of diode pumping (when compared to lamp-pumped systems) include higher efficiency, longer component lifetime, and lower maintenance

### **Optically Pumped Solid-State Lasers**

Optically Pumped Solid-State Lasers 81 Introduction In this chapter we shall discuss in some detail the operating principles, characteristics, and design features of solid-state lasers in which the laser medium is an insulating or glassy solid In many of these lasers the active particles are impurity ions doped into a host matrix These

### **Thermal Analysis and Experimental Study of End-Pumped Nd ...**

All diode pumped solid state (DPSS) lasers are of great interest for a number of industrial applications and high-power with good quality laser beams is needed for many purposes Neodymium (Nd) doped different hosts such as yttrium aluminum garnet (YAG), glass, and yttrium lithium

### **Yb Fiber Laser Pumped Mid-IR Source Based on Difference ...**

source, various solid state and diode lasers have been used to date<sup>1-6</sup>) including external cavity diode laser (ECDL) by Goldberg et al<sup>2</sup>) and Cr<sup>3+</sup>:LiSrAlF<sub>6</sub> laser by Parhat et al<sup>18</sup>) Recently, compact tunable telecommunications DFB laser diodes have become commercially available in a standard-ized ITU (International Telecommunication Union) 50GHz

### **High-spectral brightne ss pump sources for diode-pumped ...**

High-spectral brightne ss pump sources for diode-pumped solid state lasers Wentao Hu a, Falgun D Patel b, Mark L Osowski a, Robert M Lammert a, Se W Oh a, Chameli Panja c, Victor C Elarde a, Laurent Vaissié\* a, Jeffrey E Ungar a aQPC Lasers Inc, 15632 Roxford Street, Sylmar, CA 91342, USA bPhysical Optics Corporation, 20600 Gramercy Place Torrance, CA 90501-1821, USA

### **PULSED DIODE PUMPED SOLID STATE LASERS**

beams The laser resonator is housed in a body machined from solid aluminium to ensure high mechanical and optical integrity State-of-the-art diode pump modules and extremely low current-ripple electronics give rise to outputs with industry leading stabilities of ...

### **PULSED DIODE PUMPED SOLID STATE LASERS**

The Plasma DPSS series lasers are pulsed diode pumped, Q-switched Nd:YAG lasers which use the very latest in high efficiency fully diode pumped technology to replace traditional flashlamp pumping The Plasma series DPSS lasers use Litron's sealed, mechanically robust diode

### **Flash-Lamp PL2250 series Nd:YAG Lasers**

The heart of the system is a diode pumped solid state (DPSS) master oscillator placed in a hermetically sealed monolithic block The flashlamp pumped regenerative amplifier is replaced by an innovative diode pumped regenerative amplifier Diode pumping results in negligible thermal lensing, which allows operation of the regenerative

### **Wavelength Stabilization Gratings**

- Reduces thermal dependence of lasers
- Reduces unwanted spectral components
- Narrow bandwidth
- Low loss
- Highly stable and reliable with over 12,000 hours of testing at 150°C
- No degradation under high power illumination conditions
- Applications: • Diode Pumped Solid State Lasers

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(DPSSL) • Raman Spectroscopy • RGB

### **1.5-MICRON DIODE-PUMPED SOLID-STATE (DPSS) SOLID ...**

DIODE-PUMPED SOLID-STATE (DPSS) 1534-NM PULSED MICRO-LASERS 15-MICRON SOLID-STATE PULSED LASERS Voxel's high-peak-power lasers combine eyesafe-wavelength operation with high peak power, short pulse duration, and diffraction-limited beam quality to deliver unmatched size, weight, power, and

### **Laser Diode Modules and Diode Pumped Solid State Lasers**

Laser diode modules and diode pumped solid state lasers 1 Introduction Latronics GmbH offers laser diode modules (LDM) and diode pumped solid state lasers (DPSSL) as • high quality OEM-systems with emission wavelength • in the UV (266 nm - 375 nm) • in the visible (405 nm - 690 nm) • and near infrared region (750 nm - 1064 nm)

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