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 U3+-doped CaF 2 laser rod that was 3 mm in diameter and 4 cm long The laser mirrors were coated directly on the ends of the rod
Diode Laser-Pumped Solid-state Lasers
Early progress in diode laser-pumped solid-state lasers was slowed by the need for cryogen- ic cooling and by the low power levels of the diode lasers The limited diode laser power led to the investigation of low power threshold intrinsically doped neodymium lasers during the early 1970s (6) It was not until 1972, nearly a decade after the
PULSED DIODE PUMPED SOLID STATE LASERS - Litron
pumped technology to replace traditional flashlamp pumping The Plasma series DPSS lasers use Litron’s sealed, mechanically robust diode pump module to ensure stable output, high reliability, easy diode replacement and long diode lifetime of more than 2 billion pulses The Plasma Series High Energy Pulsed DPSS Nd:YAG Lasers at up to 200Hz
PULSED DIODE PUMPED SOLID STATE LASERS
The Plasma 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 pump module to …
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 Voxtel’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 cost (SWAP-C), range, and accuracy

AMS diode pumped solid state lasers overview

Our comprehensive range of Diode Pumped Solid State (DPSS) lasers includes CW and q-switched models at infrared, visible and ultraviolet wavelengths The product range serves the research and scientifi c community as well as OEM applications, for which the standard offering can be customized into turnkey solutions The lasers are designed for

PULSED DIODE PUMPED SOLID STATE LASERS

PULSED DIODE PUMPED SOLID STATE LASERS 2020 2 Nano DPSS Ultra-compact DPSS Q-switched pulsed Nd:YAG lasers FEATURES • Repetition rates up to 300Hz • Fully motorised attenuator and harmonics • Choice of resonator options • Ultra high stability • Exceptional diode life

Diode-end-pumped solid-state lasers

that power scaling of diode-end-pumped solid-state lasers is problematic due to localised heat generation in the solid-state laser medium The adverse effect of heat generation on the laser performance is also described In the design of diode-end-pumped solid-state lasers, the management of thermal effects is suggested as the approach to scale

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

built at LLNL, and how the proposed effort in diode- pumped solid state lasers is only in its infancy at this time The proposed Mercury Laser will take us on the first significant step into this new generation of high energy density and inertial confinement fusion lasers 1 …

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 arclamp 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

Thermal effects and their mitigation in end- pumped solid ...

The main problem hindering brightness scaling of diode-pumped solid-state lasers is heat generation within the laser medium, which leads to a spatial variation in temperature, and consequently internal stresses within the laser material and, in addition, deformation of the laser rod end faces due to differential expansion [8] The net result is

Gigahertz frequency comb from a diode- pumped solid-state ...

Gigahertz frequency comb from a diode-pumped solid-state laser Alexander Klenner,1,* Stéphane Schilt, 2 Thomas Südmeyer, and Ursula Keller1 1Department of Physics, Institute for Quantum Electronics, ETH Zurich, 8093 Zurich, Switzerland 2Laboratoire Temps-Fréquence, Université de Neuchâtel, 2000 Neuchâtel, Switzerland *klenner@physethzch

Compact diode-pumped solid-state lasers - KTH

Compact diode-pumped solid-state lasers Laser Physics and Quantum Optics, Department of Physics, The Royal Institute of Technology, SCFAB, SE-106 91 Stockholm, Sweden Abstract Compact diode-pumped solid-state lasers (DPSSL) are continuously replacing traditional gas lasers as well as enabling completely new technology However, compact and cost

High-power diode laser pumps for alkali lasers (DPALs)

2 (see eg Fig 1) for the two most practical diode pumped solid state lasers (Nd:YAG and Yb:YAG), along with the corresponding values for alkali

atoms Potassium, rubidium, cesium and lithium are of particular interest because they can be pumped with laser diodes utilizing III-V compound semiconductor material systems

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 …

Diode Pumped Solid State Laser Photoacoustic Spectrometer

Diode pumped solid state (DPSS) lasers span the 1-3 micron region Individual systems can tune over 100 nanometers In addition, these lasers readily offer powers in excess of 100 mW DPSS lasers are ideally suited for detecting a wide variety of trace gas species when coupled with PAS detection Of particular importance is the

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

Laser Diode Modules and Diode Pumped Solid State Lasers

Laser diode modules and diode pumped solid state lasers Contents 1 Introduction 3 2 UV Wavelengths (266 nm - 375 nm) 4 3 Visible Wavelengths (405 nm - 690 nm) 7 4 'Low noise' Visible Wavelengths (473 nm - 671 nm) 24 5 'Single longitudinal mode' Wavelengths (473 nm - 1064 nm) 25 6 Near Infrared Wavelengths (750 nm - 1064 nm) 26 7 Warranty 34

Optically Pumped Semiconductor Lasers - Coherent

Ion and diode-pumped solid-state lasers Harmonic Generation: Harmonic generation, including Second Harmonic Generation and Third Harmonic Generation, is key for many laser applications that require shorter wavelengths in the UV and visible than the gain medium’s fundamental wavelength It is a nonlinear process and depends on the square of