



## 888 nm pumping of Nd:YVO4 for high-power TEM00 lasers

By Louis McDonagh

Cuvillier Verlag Feb 2011, 2011. Taschenbuch. Book Condition: Neu. 208x146x17 mm. Neuware - For the last decade, neodymium-doped orthovanadate has established itself as the activematerial of choice for commercial solid-state lasers emitting in the 1  $\mu\text{m}$  range, with output powers from several hundred milliwatts to a few tens of watts, in continuous-wave, short nanosecond Q-switched, or picosecond modelocked pulsed regimes. Its main advantages over other Nd-doped hosts such as YAG are a large stimulated-emission cross section leading to a high gain, a strong pump absorption allowing the efficient mode-matching of tightly-focused pump light, and a natural birefringence resulting in a continuously polarized output. The main drawbacks, however, are rather poor mechanical characteristics and strong thermal lensing, effectively limiting the maximum applicable pump power before excessively strong and aberrated thermal lensing prevents an efficient operation in a diffraction-limited beam, and ultimately the crystal's fracture. Put aside the power limitation, the association of vanadate with diode end pumping allows for the realization of highly efficient and reliable laser sources based on well-known technologies, which provides an advantage in terms of manufacturability and cost-effectiveness over other high-potential technologies such as disks and fibers. This thesis introduces a novel pumping technique for Nd:YVO4 that allows for the realization of significantly higher-power laser sources with a high optical-to-optical efficiency...



[READ ONLINE](#)

### Reviews

*This book is great. it was writtern quite flawlessly and helpful. You will not truly feel monotony at whenever you want of your time (that's what catalogs are for concerning if you ask me).*

-- **Sterling Kris**

*If you need to adding benefit, a must buy book. It really is rally interesting throuh reading through period. Your way of life period will probably be convert as soon as you total looking over this book.*

-- **Ms. Kirstin O'Kon**