Ndyag solar container calculation

Abstract Remaining key challenges for solar-pumped lasers (SPLs) to be applied for terrestrial solar energy utilization are (1) improvement of energy conversion efficiency and (2) ability of ...

Abstract A multi-pass side-pumping scheme for solar pumped Nd:YAG laser on 1 m diameter Fresnel lens is numerically analyzed. Using of the Monte Carlo photon-tracing numerical ...

It discusses potential applications both on Earth and in space, and traces historical progress of solid-state solar-pumped lasers - particularly those employing Nd:YAG and Ce:Nd:YAG ...

best of our knowledge, this is the highest laser output power from a single beam/single rod Nd:YAG solar laser scheme, which is more than 5 times that of the previous most powerful Nd:YAG solar lase

Due to higher overlap factor between the absorption spectrum and sunlight spectrum, Nd:YAG, Cr:Nd:YAG, and Ce:Nd:YAG have been acted as major laser media of SPLs [14]. The maximum ...

Based on the analysis of their energy level structures, the spectral matching of three laser materials under solar pumping is analyzed by establishing a refined solar spectral model, and their application ...

Abstract A compact side-pumped solar laser design is proposed to improve the TEM00-mode solar laser output performance substantially. A double-stage secondary concentrator was ...

Abstract Here we report a significant progress in solar-pumped laser slope efficiency and collection efficiency by pumping a 4.0 mm diameter grooved Nd:YAG single-crystal rod with a ...

We studied possible techniques for increasing the power-to-power conversion efficiency of the Ce:Nd:YAG solar laser using a simulation model developed with the Monte-Carlo ...

A model about side-pumped four-level Nd 3+:YAG solar laser is proposed, where the solar spectrum as well as Nd 3+:YAG absorption spectrum is taken into account. The model is ...

Solar-pumped lasers can directly convert incoherent, low-brightness solar radiation into coherent, high-brightness laser radiation without the requirement of artificial pump light sources such as ...

1 Introduction Solar-pumped lasers have gained an ever-increasing importance in recent years [1]. Compared to electrically powered lasers, solar laser is much simpler and more reliable due to the ...

The solar laser performance of the Ce:Nd:YAG laser head was numerically studied by both ZEMAX®

v13 and LASCADTM v1 software. Maximum multimode laser power of 99.5 W was computed for the ...

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