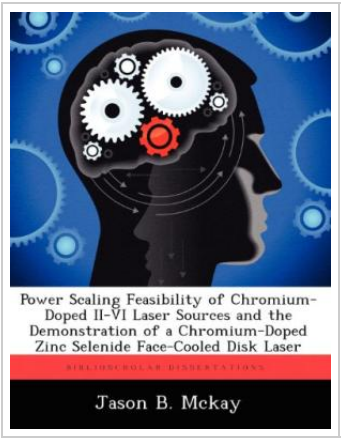

Power Scaling Feasibility of Chromium-Doped II-VI Laser Sources and the Demonstration of a Chromium-Doped Zinc Selenide Face-Cooled Disk Laser (Paperback)

By Jason B McKay

Bibliioscholar, United States, 2012. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.Tunable laser sources in the 2-4 m spectral range are required for several Air Force sensor applications, yet choices are few in that spectral region, and no truly satisfactory source has yet been found for all applications. Additional source alternatives are needed in addition to the existing rare-earth lasers and non-linear optical sources. Chromiumdoped II-VI (Cr2+: II-VI) materials, a new and relatively undeveloped class of laser material, have the promise of tuning over most of the 2-4 m region, but are susceptible to thermal effects and have other issues that make demonstration of sources with sufficient output power difficult. The output power of the Cr2+: II-VI laser needs to be scaled up to meet military application requirements. This dissertation investigates the feasibility of using Cr2+: II-VI laser materials to produce a laser with enough output power to be useful in military sensor applications. This dissertation surveys Cr2+: II-VI material properties and potential laser designs to assess power scaling feasibility, verifies feasibility with a laser demonstration, and then characterizes the thermal effects in the working laser material to help evaluate its effectiveness. The results...

Reviews

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