



Pulling Doped-YAG Single-crystal Fibers

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Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | Growth, Characterization, and Applications | Pulling bulk crystal into fiber is suitable for device applications in optical communications because of its structural similarity to silica fiber. Among fiber growth techniques, the laser-heated pedestal growth method (LHPG) was adopted. It is crucible free and can therefore produce high-quality single crystals. However, interface loss of the fiber is one of the main causes of optical loss. In order to reduce the loss, a proper method to clad the fiber is important for high performance device. For laser application, high-efficient Nd:YAG lasers were demonstrated using gradient-index crystal fibers. For ASE and optical amplifier applications, Cr⁴⁺:YAG crystal fiber was studied due to its fluorescence just covering the low loss window of optical fiber. To reduce the fiber diameter and propagation loss, a novel cladding technique, codrawing LHPG, was developed. A double-clad fiber was successfully grown by the technique. As much as 2.36 mW of ASE with a bandwidth of 265 nm was demonstrated. Up to 16-dB of gross gain at 1470 nm was also achieved. It is the first transition metal-doped fiber amplifier in the optical communication band. | Format: Paperback | Language/Sprache: english | 116...



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