



Erbium Doped Silicon Nanocrystal

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Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | for Optical Amplification and Lasing | Silicon has been considered for a long time unsuitable for photonic applications. Among the different approaches developed to overcome this problem, quantum confinement in silicon nanostructures and rare earth doping in crystalline silicon have received a great attention. A combination of these two approaches leads to a strong & efficient enhancement of the erbium emission in silicon nanocrystal. Luminescent emission wavelength (1.54 μ m) of erbium corresponds to the minimum attenuation in long haul optical communication. Besides, Si-nc enables inexpensive and efficient pumping. Enhanced photonic properties of Er doped Si-nc makes it the material of choice for photonic application of the next generations. It can be served as optical interconnects to overcome the bottlenecks of traditional electronic interconnects. This device has the potential to exhibit practically unlimited bandwidth, greater immunity to cross-talk, negligible power dissipation and other attractive features. It promises the development of silicon based light emitter, laser and other key photonic devices, thus paving a new era of monolithically integrated electronics and photonics sharing the same chip. | Format: Paperback | Language/Sprache: english | 192 gr | 220x150x7 mm | 132 pp.



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