



## Wide-Gap Luminescent Materials Theory and Applications Electronic Materials Science Technology

By -

Springer. Hardcover. Condition: New. 368 pages. Dimensions: 9.5in. x 6.4in. x 1.0in. Electro-optic devices based on doped wide-band materials are present in industrial uses, in military applications and in everyday life. Whether one engages in laser surgery with a neodymium-Y AG laser or one communicates overseas using optical fibers, the development of these materials is both scientifically and commercially of great interest. Much of the most innovative work has been done in the last 15 years in this area. A minor revolution in optical fiber communications has occurred with the development of erbium-doped fiber amplifiers. Solid-state laser development shifted into high-gear with the theoretical and experimental study of doubly-doped garnet lasers. Recent developments on semiconductor laser arrays are making diode pumped solid-state lasers commercially feasible. The purpose of this book is to detail these developments and to point out that many of the same underlying physical processes control advances in several diverse applications. For example, the basic science of energy transfer will be discussed by Zharikov et al. and Rotman for energy transfer and dopant-defect interactions, respectively; it will also be crucial in understanding cerium-doped scintillators, neodymium-chromium lasers, and up-conversion fiber lasers. As another example, phonon-induced non-radiative relaxation will appear...



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