Spectroscopic properties of Pr-doped silica gel-glasses.

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Silica glasses doped with active ions are important for developing quantum electronic devices due to their high thermal shock resistance and relatively low nonlinear refractive index n2 in companson with silicate and phosphate glasses. Such glasses doped with Nd ions could be a good candidate for powerful lasers. However, animportant limitation of Nd-doped silica glasses is the low solubility of active ions in the traditional melting-casting process. A significant enhancement of Nd concentration can be achieved by the sol-gel technique. Such glasses were recently prepared by Pope and Mackenzie I1 I and Fujiyama et at. [2]. The latter authors have shown that silica gel glass codoped with A1203 have significantly improved optical properties. This is due to the fact that codoping
by AI203 significantly decreases the microscopic clustering of Nd 3+ ions. Recently it was demonstrated [3] that silica gel glasses can be efficiently doped with active ions by impregnation of xerogel,

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