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An optical criterion to obtain crystalline miscible mixtures in alkali halides RICARDO RODRIGUEZ-MIJANGOS, CIFUS-Universidad de Sonora, GUSTAVO VAZQUEZ-POLO, IFUNAM-Universidad Nacional Autonoma de Mexico, RAUL PEREZ-SALAS, CIFUS-Universidad de Sonora — This work gives a novel criteria for obtain solid solutions in alkali halide solids and discuss some results obtained in the development of ternary and quaternary miscible crystalline dielectric mixtures of alkali halides. The mixtures are miscible in any proportion of their concentration. The obtaining of these mixed crystals is quite related to the F center through to the F center through the behavior observed in the optical absorption F band as a function of the lattice constant of the alkali halide where this was formed (F center). Visually, in an energy curve of the F band versus lattice constant, an agglomeration of points is observed , which sets the standard for considering that if the materials that corresponds to these points were to be mixed, a solid solution could be obtained, meaning, a single phase crystal , which resulted in ternary and quaternary mixed crystals. Thus, the optical absorption F band allows obtaining a numerical criteria, based on the percentage of the F band energy, in order to obtain solid solutions.

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