

## **Spectral kinetics of Ce<sup>3+</sup> ions in double-fluoride crystals with a scheelite structure**

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### **Abstract**

The influence of the cation composition on the spectral kinetics of Ce<sup>3+</sup> ions in double-fluoride crystals with a scheelite structure is studied. The importance of the photodynamic processes induced in these crystals by the exciting radiation is demonstrated. The difference in luminescence quantum efficiency between Ce<sup>3+</sup> ions in LiYF<sub>4</sub> and LiLuF<sub>4</sub> crystals is found to be due to the different lifetimes of color centers produced in the samples by the exciting radiation and to the different efficiency of the free-carrier recombination at cerium impurity centers. It is shown that Yb<sup>3+</sup> ions can increase the carrier recombination rate in the crystals. © 2005 Pleiades Publishing, Inc.

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