

OSCILLATOR REGULARITY OF THE ENERGY SPECTRUM OF TRAPS IN NaCl CRYSTALS

A. F. Gumenjuk, S. Yu. Kutovyi

Taras Shevchenko Kyiv University
(6, Academician Glushkov Prosp., Kyiv 03022, Ukraine)

S u m m a r y

The activation energy spectra of traps in undoped NaCl crystals are studied in detail by the method of thermoluminescence. Crystals of NaCl are thermally treated in different modes. The activation energies of traps form a single oscillator series: $E_n = \hbar \omega (n + 1/2)$, $\hbar \omega = 904, \ddagger^{-1}$. Contrary to other previously studied crystals with complicated lattices, the corresponding line $\hbar \omega_{\text{Ram}} = \hbar \omega_{\text{TL}}$ was not found in the Raman spectrum of NaCl. It is assumed that the oscillator regularity is governed by the polaron nature of traps. The trap activation energy is determined by the vibration level, from which the transition of a charge carrier to an excited luminescence center becomes possible, and it depends on a distance between centers.