Determination of the trapping parameters of thermoluminescent glow peaks of K2YF5:Ce by three points method

M.S. Rasheedy, M.A. El-Sherif and M.A. Hefni.

Abstract:

The three points analysis method was applied to determine the number of peaks and kinetic parameters. These are the order of kinetics b, the activation energy E (eV), the frequency factor S (s⁻¹) or the pre-exponential factor S″ (s⁻¹) and the relative value of the initial concentration of trapped electrons n₀ (cm⁻³) associated with the thermoluminescence (TL) glow peaks in double potassium yttrium fluoride (K2YF5) doped with cerium ions (Ce³⁺) in response to ²⁻-irradiation. The three points analysis method indicated that the glow curve of this material is the superposition of five general-order components, which was referred to as P1–P5, in the temperature range between room temperature and 500 °C.

Keywords:

Thermoluminescence; Trapping parameters; Glow peaks

Published In:

Nuclear Instruments and Methods in Physics Research B, B 258, 5