

THE REVEAL OF DEFECTIVE
STATES IN THE LUMINESCENCE
AND PHOTOCONDUCTIVITY SPECTRA
OF LEAD TUNGSTATE CRYSTALS

*I.M. Sol'skii, A.S. Voloshinovskii¹,
R.V. Gamernyk¹, A.S. Krochuk¹, Z.A. Khapko¹*

Scientific Research Company 'Carat'
(202, Stryiska Str., Lviv 79031, Ukraine),

¹I. Franko Lviv National University, Faculty of Physics
(50, Dragomanov Str., Lviv 79005, Ukraine)

S u m m a r y

The influence of growth technology conditions on both transition and X-ray luminescence spectra and on decay curves is investigated for PbWO₄ crystals. It is found that the intensity of the 420 nm absorption band increases with crystal defectiveness, and a redistribution of the luminescence spectrum takes place. The last causes an increase in the slow component yield and a decrease in that of the fast one. Types of charge carriers created in PbWO₄ crystal under optical excitation are detected by analyzing the photodiffusion current direction. The models of possible 'green-yellow' luminescence centers are proposed on the basis of the observed azimuth dependence of the photocurrent on the direction of light wave vector oscillations.