

DISTRIBUTION OF LIGHT SUM  
ACCUMULATION AND SCINTILLATION  
EFFICIENCY OF CRYSTALLOPHOSPHORS  
UNDER X-RAY EXCITATION

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S u m m a r y

For the kinetic model of X-ray luminescence, we develop a system of calculation of the spatial average statistical distribution of charge carriers over the centers of accumulation and recombination, which is formed during the stage of generation. The specificity of excitation of luminophors by X-ray causes a substantial spatial inhomogeneity of the generation of electronic excitations (excitons and free charge carriers), which leads to a spatial inhomogeneity in the accumulation of carriers by various centers. We derive a system of calculation of the distribution of carriers over various centers, which allows one to determine the scintillation efficiency of material and to get the initial conditions for determination of the function of decay of scintillation impulses, phosphorescence, and the light sum accumulation over different traps.