

**COMPLEX DEFECTS IN SCINTILLATION CRYSTALS****VIKTOR LISITSYN<sup>1</sup>, LIUDMILA LISITSYNA<sup>2</sup> AND ELENA POLISADOVA<sup>1</sup>**<sup>1</sup>*National Research Tomsk Polytechnic University, Russia*<sup>2</sup>*Tomsk State University of Architecture and Building, Russia**lisitsyn@tpu.ru*

The existing models assume that the defects are distributed evenly in the crystal lattice. The defect as a dopant is an elementary unit with specific properties independent of the system it is located in. This assumption is supported by studies of radiation induced processes in crystal phosphors with a perfect structure and low concentration of the dopant. However, in real crystal phosphors used in practice the concentration of defects, dopants is large, and the crystal structure is complicated and imperfect. Therefore, we can assume that the defects are incorporated in these crystals in synthesis, in the form of complex systems. The complexes should represent the dopant entered with other impurities, often in the form of hydroxyl groups, oxygen, particularly if the synthesis is carried out in air, intrinsic lattice defects, which compensate the difference in the charge and elastic stresses in the region of the dopant.

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