

LUMINESCENCE SPECTROSCOPY OF  $KMP_2O_7$   
DIPHOSPHATE CRYSTALS (M = Al, In)  
DOPED WITH CHROMIUM IONS

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S u m m a r y

We considered luminescence properties of  $KMP_2O_7$  (M = Al, In) crystals doped with chromium ions. The luminescence spectra of these crystals consist of two principal bands located in the green-orange and red spectral regions. The positions of the bands as well as their shape depend on the type of a metal (Al or In), the temperature of a crystal, the admixture concentration, and the exciting radiation wavelength. A complicated structure of the green-orange band results from a superposition of the radiation of the crystal matrix and that of admixture chromium ions in the charge state  $6^+$  that belong to  $CrO_4^{2-}$  molecular groups. The red luminescence band is conditioned by radiative transitions in  $Cr^{3+}$  ions in the octahedral oxygen environment. We consider the influence of the crystal field strength on the position of the red luminescence band. The possibilities for chromium ions to occupy various sites of the crystal lattice are discussed.