

NEUTRON AND OPTICAL
RESEARCHES OF MULTICOMPONENT
CRYSTALLINE $Y_3Al_5O_{12}:Ce^{3+}/Lu_2O_3$
AND $Lu_3Al_5O_{12}:Ce^{3+}/Lu_2O_3$ LUMINOPHORS

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S u m m a r y

Peculiarities in the crystal structure and spectral-luminescent properties of compound oxide systems $Y_3Al_5O_{12}:Ce^{3+}/Lu_2O_3$ and $Lu_3Al_5O_{12}:Ce^{3+}/Lu_2O_3$ are studied using the neutron diffraction and optical spectroscopy methods. The influence of the introduced oxide on the structural and luminescent properties of those systems is shown to have a complicated character depending not only on the formation of a stable defect garnet structure and the diffusion of Ce^{3+} ions from the matrix into the oxide, but also on the interaction between the oxide and the matrix, which gives rise to the formation of new phases.