Abstract: In the present work we studied Pr, Sc co-doped and Eu-doped $Lu_3Al_5O_{12}$ thin epitaxial garnet layers prepared by liquid phase epitaxy (LPE) on $Y_3Al_5O_{12}$ (YAG) and $Lu_3Al_5O_{12}$ (LuAG) single crystalline substrates. In the process of growth BaO - BaF_2 - B_20_3 (Pr, Sc co - doped layers) and PbO - B_2O_3 (Eu - doped layers) fluxes were used. These materials are considered perspective scintillators with high density, fast scintillation response, high quantum efficiency and good chemical and mechanical stability. They are used in a number of applications in which high spatial resolution is required. The absorption, emission and excitation spectra of experimental samples were measured and investigated. Our attention was focused especially on the study of influence of Sc^{3+} ions on the emission properties of Pr^{3+} ions in epitaxial layers which mutually contain various amounts of concentrations of dopants. The Sc^{3+} ions do not show any radiative transitions in visible and UV spectral regions, but they increase the scintillation response of Pr^{3+} ions. This phenomenon is caused by overlappig of the Sc-related emission around 275 nm with the 4f-5d absorption band of Pr^{3+} centers. By measurement of radioluminescence this energy transfer from Sc^{3+} to Pr^{3+} activator centres was confirmed.