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Effective Transfer of UV Energy to Red Luminescence in the Nanocomposites Polymer/Eu Coordination Compounds

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Nanocomposites (NCs) thin films based on oligomer poly-N-epoxypropylcarbazole (PEPC) and organic coordinated compounds (OCC) have been obtained by chemical methods. Absorption threshold for samples with different concentrations was determined as 3.34 - 3.4 eV. Photoluminescence spectra reveal a number of emission bands centered at 580, 590, 612-615, 651, and 700 nm, which can be associated to internal 4f - 4f transitions of Eu^{3+} ion $^5D_0 \rightarrow {}^7F_i$ *(i = 0,1,2,3* and *4)*. By comparing the photoluminescence spectra of the organic compound and of the PEPC/*Eu(o-MBA)*$_3$*Phen* nanocomposite one can observe the amplification of the photoluminescence intensity in NC.