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Time resolved energy transfer in polymers doped with heavy atom molecule[1] ELLA OLEJNIK, YAXIN ZHAI, ZEEV VARDENY, Department of Physics and Astronomy, University of Utah — We used the technique of pump/probe transient photomodulation (PM) spectroscopy with high intensity and low repetition rate in the spectral range of 1.2 – 2.5 eV and 100 fs time resolution for studying the excitons dynamics properties of solid state mixtures of few % (X) heavy metal organic molecules in a pi-conjugated polymer host up to 2 ns. We found that the photobleaching (PB) spectrum contains two components; an instantaneous component due to the direct excitation of the heavy metal molecule guests, and a slower component due to energy transfer from the host polymer chains to the guest molecules. The PM spectrum also contains a built-up of a photoinduced absorption band at ∼1.5 eV that we assigned as due to excitons in the guest molecules, that has the same dynamics as that of the PB.

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