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Optical studies of platinum-containing conjugated polymers MINGHONG TONG, Physics Department, University of Utah, ALESSIO GAM-BETTI, TOMER DRORI, ZEEV VARDENY, Physics Department, University of Utah — We have used a variety of steady state and ultrafast spectroscopies for studying the photophysics of platinum-containing conjugated polymers, which have potential applications as the active layer of light-emitting diodes. The intrachain heavy metal Pt atom increases the spin-orbit coupling, and this influences both the intersystem crossing time, T_{ic} , and the phosphorescence emission strength. From the ps transient pump-probe photomodulation spectroscopy and emission dynamic measurements using the up-conversion technique, we found that T_{ic} for these polymers is of order of few ps; whereas the phosphorescence lifetime is of order of few microseconds.

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