6. Title: Electrical and optical properties of polyfluorene thin films studied by THz time-domain spectroscopy

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Abstract: We report on the electrical and optical characteristics of the conjugated polymer poly[9,9-bis-(2-ethylhexyl)-9H-fluorene-2,7-diyl] (PFO) studied by THz time-domain spectroscopy. A differential spectroscopy method was employed to measure the THz response of 1 mu m thick PFO films. The THz spectra of optical and electrical characteristics of the PFO films can be described reasonably well by the Lorentz oscillator model with one effective oscillator. The large coupling constant of the effective oscillator testifies the strong intra-chain localization of charged carriers in the PFO polymer.