

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Optical Studies of Excited States in Polyfluorene¹ MINGHONG TONG, CHUANXIANG SHENG, Z.VALY VARDENY, Physics Department, University of Utah — Polyfluorene is an attractive π -conjugated polymer for display applications owing to efficient blue emission and relatively large hole mobility with trap free transport. The understanding of its photophysics is important for improving its applications. We have applied a variety of ps transient and cw optical techniques to study the optical properties of poly(9,9-dioctyl) fluorene (PFO). These spectroscopies include absorption, photoluminescence, electroabsorption (EA), two-photon absorption (TPA), and ps transient photoinduced absorption. Using these techniques we probed odd- and even-parity excited states that are complementary to each other. We fitted the EA and TPA spectra by calculating the imaginary part of the third order optical susceptibility using a summation over states model, which include the effects of strongly coupled vibrations and distribution of conjugation lengths.

¹Supported in part by the DOE.

Minghong Tong
Physics Department, University of Utah

Date submitted: 22 Nov 2005

Electronic form version 1.4