Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Ultrafast Transient-Absorption Studies of Spatially Confined Conjugated Oligomers DAVID BUSSIAN, ALEXANDER MIKHAILOVSKY, BIN LIU, GUILLERMO BAZAN, STEVEN BURATTO, University of California - Santa Barbara, Dept of Chemistry and Biochemistry, Center for Polymers and Organic Solids — We will report on femtosecond transient-absorption (TA) studies of a series of oligophenylenevinylene molecules (NROPV) and a confined system wherein four oligomers are bound via a tetrahedral carbon core (TNROPV). TA spectra and dynamics for a span of pump fluences will be presented for both NROPVs and TNROPVs. Our data shows pronounced power dependent features present in TNROPV which we attribute to confinement induced coupling. These studies present a unique perspective on coupling in spatially extended conjugated molecules that is intermediate between that of isolated chromophores and bulk films. Furthermore, they have helped to clarify the fundamental description of the excited state(s) present in these conjugated oligomer structures.

David Bussian

Date submitted: 01 Dec 2004 Electronic form version 1.4