Abstract Submitted
for the 4CF09 Meeting of
The American Physical Society

Molecular interactions of a photo-active monolayer YU AN LO, THOMAS FURTAK, Colorado School of Mines, JOSEPH DAHDAH — Photo-active materials are widely applied in optical data storage,wave guides,refractive index manipulation, and photo-alignment of liquid crystals. Many of these materials involve an azobenzene unit, which undergoes trans-cis photoisomerization. In this work, a methyl red derivative (dMR) monolayer was studied to understand its high light sensitivity and power-law kinetics when responding to polarized light. We simulated a variety of monolayer molecular fields by dilute dMR solutions in different organic solvents. We studied the spectral and time-dependent characteristics of the absorbance in these environments and in monolayer films. The cis-trans thermal relaxation demonstrates an unexpectedly complex dependence on molecular environments that may be related to the monolayer behavior.

Yu An Lo
Colorado School of Mines

Date submitted: 25 Sep 2009 Electronic form version 1.4