

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Local photo-reorientation of a liquid crystal using a laser focused on an azo dye-based monolayer**<sup>1</sup> YUE SHI, NOEL CLARK, Department of Physics and Liquid Crystal Material Research Center, University of Colorado at Boulder — The orientation adopted by molecules in an azobenzene-based self-assembled monolayer (azo-SAM) is perpendicular to the polarization of incident green light due to isomerization, aligning liquid crystal (LC) correspondingly. To study the local photo reorientation of the LC, the exciting laser is focused into a small spot on the azo-SAM, of a hybrid cell made with nematic LC sandwiched between the azo-SAM and a homeotropic surface. Under irradiation with changing polarization, a variety of interesting phenomena are observed, including winding of rings of reorientation and orientational slipping. Results vs. exciting light intensities and different rotating frequencies will be reported.

<sup>1</sup>Supported by NSF MRSEC Grant DMR-0213918

Noel Clark  
Department of Physics and Liquid Crystal Material Research Center, University of Colorado at Boulder

Date submitted: 27 Nov 2007

Electronic form version 1.4