Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Liquid slip probed by second harmonic generation[1] DAN LIS, Laboratoire Lasers & Spectroscopies, University of Namur, STEVE GRANICK, BAE SUNG CHUL, Departments of Materials Science and Engineering, Chemistry, and Physics, University of Illinois, SCIENTIFIC EXCHANGE COLLABORATION —
Second harmonic generation has been used to probe how a solid surface responds to flow past it. The surface is quartz, the measurements are made in total internal reflection configuration, and comparison of responses to light with s and p incident polarisation allows us to determine the orientation of dye molecules physisorbed before the onset of the shear flow. By monitoring the orientation of the dye at different fluid viscosity and different shear rate, we deduce the surprising relation between shear rate and surface stress.

[1]Dan Lis acknowledges the Belgian Fund for Agricultural and Industrial Research (FRIA) for financial support.

Dan Lis
Laboratoire Lasers & Spectroscopies, University of Namur

Date submitted: 25 Nov 2007 Electronic form version 1.4