Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Deposition and Solidification of PPV Precursor[1] EDWARD BURDETTE, Grove City College, HANS HALLEN, North Carolina State University — Future high performance polymer films will be comprised of molecules oriented in the plane of the substrate. As a first step, a mixture of poly(p-xylene tetrahydrothiophenium chloride) in methanol was spun onto a sapphire substrate. These samples were fabricated over a range of spin-coating times, methanol solution concentrations, and number of drops of solution. Analysis with an ellipsometer revealed that layer thickness is independent of spinning period and applied solution volume, and decreases as the parts per volume of methanol increases. Furthermore, the samples were exposed to various wavelengths of UV-visible radiation to determine the optimal wavelength for driving these precursor molecules into a solid thin film, insoluble in methanol. Light from a mercury arc-lamp with a wavelength of 365 nm was found to solidify the precursor within five minutes of exposure most effectively.

[1]Research sponsored by the National Science Foundation Research Experiences for Undergraduates Program in the Department of Physics, grant number DMR-0353719

Edward Burdette
Grove City College

Date submitted: 28 Nov 2005 Electronic form version 1.4