

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

New Soft Matter Soft X-ray Scattering Facility and the Advanced Light Source with Real Time Analysis ELIOT GANN, North Carolina State University, ANTHONY YOUNG, Lawrence Berkeley National Laboratory, BRIAN COLLINS, HONGPING YAN, North Carolina State University, HOWARD PADMORE, Lawrence Berkeley National Laboratory, HARALD ADE, North Carolina State University, ALEX HEXEMER, CHENG WANG, Lawrence Berkeley National Laboratory — We present the development and first experiments at a new user scattering facility at the Advanced Light Source at Lawrence Berkeley National Laboratory designed to elucidate the structure of polymer thin films, including a number of systems important for understanding organic devices. These experiments utilize enhanced contrast mechanisms available due to resonance effects to gain sensitivity to morphology which other probes and harder X-ray beams cannot probe. We present the development of new characterization and calibration techniques as well as procedures to mitigate the unique problems that come with scattering in this energy range. These allow us to obtain quantitative scattering profiles and thus ensemble morphological information of these devices. In addition, we present a live analysis package which does initial data reduction in real time while scattering data is being collected.

Eliot Gann
North Carolina State University

Date submitted: 11 Nov 2011

Electronic form version 1.4