Surfaces and polymers: The dynamics of intimacy

SUBHALAKSHMI KUMAR, CHANGQIAN YU, University of Illinois, Urbana Champaign,
JANET WONG, Imperial College London, LIANG HONG, Dow Chemicals, SUNG
CHUL BAE, STEVE GRANICK, University of Illinois, Urbana Champaign — The
dynamics of a hydrophobic polymer melt, well above its glass transition, is probed
when it is confined to thicknesses of a few nanometers. The ability of the surface
forces apparatus to produce controlled thin films is coupled with measurements us-
ing fluorescence recovery after photobleaching technique. Insight into the effects of
degree of confinement on diffusion of the polymer molecules and heterogeneity in
their dynamic behavior is sought.