Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Puzzles in Surface Force Apparatus (SFA) Experiments JANET WONG, University of IIllinois at Urbana-Champaign, YINGXI ZHU, University of Notre Dame, STEVE GRANICK, University of IIllinois at Urbana-Champaign —
Since Frantz and Salmeron (1998) found that the surface energy of recleaved mica is 50% higher than that cleaved using conventional cleaving method detailed in Israelachvili et al. (2004), there is concern in the SFA community on how the mica surface preparation influences observations. In addition, mica's surface condition might be responsible for the divergence between experiments and computer simulation in this area. Our group has been working on mica cleaved based on the "Salmeron method." While some differences in results were obtained from mica prepared by different methods, the underlying cause for such discrepancy is not well understood. In addition, it is not clear if mica preparation affects all SFA results performed in different experimental conditions equally. This presentation will give a comparison on results obtained using mica with different cleaving methods. Experimental parameter(s) that renders mica surface condition an important consideration will be discussed.

Janet Wong
University of IIllinois at Urbana-Champaign

Date submitted: 01 Dec 2004 Electronic form version 1.4