Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Self-organization of surfactant aggregates on rough and smooth surfaces HANNES C. SCHNIEPP, Chemical Engineering Department, Princeton University, HO C. SHUM, DUDLEY A. SAVILLE, ILHAN A. AKSAY, CERAMIC MATERIALS LABORATORY TEAM — Atomic force microscopy (AFM) investigations of surfactant aggregates at liquid-solid interfaces have traditionally been performed on atomically smooth mica, graphite or gold. In order to extend the utility of this technique to more practical applications where atomically smooth surfaces rarely exist, we present results on rough gold surfaces for the first time. We achieve high-quality images of micellar structures on rough surfaces by using sharp, soft AFM probes. Contrary to the orientational order observed on atomically smooth surfaces, micellar organization on rough surfaces is also affected by the grain boundaries and atomic ledges. Our approach opens up the possibility of investigating surfactant self-assembly on arbitrary materials.

Hannes C. Schniepp
Chemical Engineering Department, Princeton University

Date submitted: 20 Nov 2006 Electronic form version 1.4