Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Electrokinetic Stabilization of Thin Surfactant Films SOUMYADIP SETT, RAKESH SAHU, ALEXANDER YARIN, University of Illinois at Chicago — Ionic surfactant solutions were used to study gravitational drainage from thin vertical planar films supported on a frame with the upper and lower parts being electrodes. The imposed electric field resulted in the following physical phenomena: (i) surface charge redistribution, (ii) electroosmotic flow in the diffuse layer, and (iii) pressure build-up near the electrode to which the electroosmotic flow is directed. The interplay of these phenomena stabilized the film drainage irrespectively of polarity. Similar effects were observed with foams.

Soumyadip Sett
University of Illinois at Chicago

Date submitted: 07 Nov 2015 Electronic form version 1.4