Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Network Formation at the Air-Water Interface ALINE MILLER, MARIA SIMON SAENZ DE SAMANIEGO, University of Manchester — A series of diacetylene end functionalised peptides have been designed to form beta-sheet rich monolayers at the air-water interface and their structure, rheological properties and ability to polymerize in response to UV light have been studied using a Langmuir trough and dilatational rheology. Surface pressure-area isotherms as well as compression-expansion cycles reveal all our peptide monolayers organise into the three distinct organisational states typically observed for surfactants at the air-water interface: gaseous (G), liquid expanded (LE) and liquid condensed (LC) and the limiting area per molecule suggests the alternating amphiphilic character of the peptide causes the molecule to orient with its long axes parallel to the air-water interface. The presence of the diacetylene group enhances surface activity and stability over time. Here we will discuss how peptide sequence, UV exposure strength and time, as well as peptide concentration (and hence organisation) influence the kinetics of network formation, and the morphology and mechanical properties of the final network formed.

Aline Miller
University of Manchester

Date submitted: 25 Nov 2008 Electronic form version 1.4