Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Hierarchical Self Assembly of Actin Bundle Networks LINDA HIRST, CYRUS SAFINYA, Materials and Physics Depts. Biomolecular Science and Engineering Program, UCSB. — The network-like structure of actin bundles formed with the cross-linking protein α-actinin has been investigated on different length scales via small angle x-ray scattering and confocal fluorescence microscopy. We describe the hierarchical structure of aggregates formed at different ratios of cross-linker using both α-actinin and also the non-specific polyelectrolyte, polylysine. The effects of different lengths of F-actin are also discussed. An interesting feature of this system is the formation of a dense layer on the surface of the actin gel. This layer exhibits interesting morphologies and can be formed to have a defined shape. Biologically based structures such as this have the potential to generate interesting biological scaffolds for applications in cell encapsulation and tissue engineering.

Linda Hirst
Materials and Physics Depts. Biomolecular Science and Engineering Program, UCSB.

Date submitted: 30 Nov 2004 Electronic form version 1.4