

Abstract Submitted  
for the OSS14 Meeting of  
The American Physical Society

**Effect of active site density on rupture force distributions in ligand-protein force measurements** ANWESHA SARKAR, Graduate Student, PETER HOFFMANN, Professor — Self-assembled monolayers (SAM) are molecular aggregation of organic molecules (which are automatically formed on surfaces by adsorption and are arranged into ordered domains). Such a SAM has three components - head, tail and functional end group. The head group is chemically adsorbed onto the surface of the substrate with slow alignment of tail groups. Exchange reactions between self assembled monolayer on gold have already been proven to be a very effective method for functionalization. We are using the same method to find the surface density and pursue the force measurements. The substrate (which is mica coated with 5 nm of chromium and 50 nm of gold) will be incubated in mPEG (methyl terminated Poly Ethyl Glycol) solution followed by incubation in Biotin-PEG-SH solution (for 24 hours in both solutions). We planned to image the substrate by varying hours of incubation (with a non functionalized cantilever) and pursue the force measurements with Avidin functionalized cantilever after each time of imaging. This will be a comparatively easier or less complicated method to use in future to measure surface density and rupture forces.

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Date submitted: 17 Mar 2014

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