

NC State University
Chemical and Biomolecular Engineering
Graduate Student Association
Seminar Series

**Formation and characterization of a
two-component self-assembled monolayer of
thiolate containing oligo(ethylene glycol) on gold**

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4:00–4:45 p.m.
2015 EB1

Self-assembled monolayers (SAMs) of oligo(ethylene glycol)-terminated alkanethiols can resist the adsorption of proteins. A two-component SAM using $\text{HS}(\text{CH}_2)_{11}(\text{CH}_2\text{CH}_2\text{O})_6\text{NH}_2$ and $\text{HS}(\text{CH}_2)_{11}(\text{CH}_2\text{CH}_2\text{O})_3\text{OH}$ could be an excellent candidate as an anchor layer for the immobilization of ligands or proteins in the study of protein-ligand and protein-protein binding events on surfaces with lower background from non-specific protein binding. Mixed SAMs are formed by the competitive adsorption of thiols, consequently, the composition of the SAM and surface properties depends on the concentration of thiol in solution and preparation conditions such as solvent and adsorption time. In this work, the study of the surface properties of this two-component SAM on gold surface and its dependency on thiol binding conditions is reported, by using X-ray photoelectron spectroscopy (XPS), measurement of contact angles, and atomic force microscopy (AFM). The amount of protein adsorbed on heterogeneous SAMs prepared under different conditions will be measured by Surface Plasmon Resonance (SPR).

Refreshments will be served 4:45-5:00 p.m. in the faculty lounge.