

# Characterization of the molecular chemistry of metallopeptides on a gold surface

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We report the submonolayer adhesion of metallopeptides to a gold surface. The goal of this research is to visualize the structure and orientation of the metallopeptide molecules predicted by molecular modeling calculations, gain information about the changes in molecular chemistry of the metallopeptide molecules, probe the electro-optic properties of the surface, and observe any changes in properties as various schemes of chemical modification are applied to the modified surface. Using DNA constructs, we produce via bacterial protein expression systems, novel metallopeptides of varying numbers of domains ( $\alpha$ )<sub>n</sub> based on the well studied metalloprotein, metallothionein. Molecular modeling calculations (MM3/MD) calibrated using metal-edge XAFS simulations<sup>1</sup> provide us with a means to visualize the metallopeptides on gold surfaces. Spectroscopic and surface probe techniques are used to characterize the modified gold surfaces.

1. J. Chan, M. E. Merrifield, A. V. Soldatov and M. J. Stillman, *Submitted to Inorganic Chemistry* (2005)

