SYNTHESIS OF NOVEL OLIGO(PHENYLENE VINYLENE)-BIPYRIDYL LIGANDS FOR ENHANCED CATALYTIC HYDROLYSIS ON A GOLD NANOPARTICLE PLATFORM. Orsolya Karácsony[a], Scott A. Trammell[b], Eddie L. Chang[b] and D. Andrew Knight[a]. a: Chemistry Department, Florida Institute of Technology, 150 West University Boulevard, Melbourne, FL 32901. b: Center for Bio/Molecular Science and Engineering, Naval Research Laboratory, 4555 Overlook Avenue SW, Washington, DC 20375.

We are interested in enhancing metal-based homogeneous catalysts that can be directed to chemical agents neutralization/microbal decontamination. Homogenous catalysts can be finely tuned, sterically and electronically, through a selection of neutral molecules or ions bound to the catalytic center. Our goal is to enhance hydrolysis using a novel approach that combines electronically-modulated catalysis - via molecular wires attached to gold nanoparticle (NP) surfaces - with additional desolvation effects, decreased conformational freedom, and cooperative effects of multi-metallic catalytic centers at gold NP surfaces. We will describe the synthesis and characterization of the ligands.