Supporting Information For:

Optimizing Molecule-Like Gold Clusters for Light Energy Conversion

Kevin G. Stamplecoskie† and Abigail Swint‡

† Department of Chemistry, Queen’s University, 90 Bader Lane, Kingston, ON, Canada, K7L 3N6

‡Notre Dame Radiation Laboratory, Department of Chemical Engineering, University of Notre Dame, Notre Dame, Indiana, 46556, United States
Figure S1. Mass spectra for Au$_{10-12}$GSH$_{10-12}$ (A), Au$_{15}$GSH$_{13}$ (B), Au$_{18}$GSH$_{14}$ (C) and Au$_{25}$GSH$_{18}$ (D) where the major ions for each of these solutions are identified (adapted from reference 3).
Figure S2. Time-decay traces measured at 600 nm, and after 387 nm/130 fs laser excitation for each of Au$_{25}$GSH$_{18}$ (A), Au$_{18}$GSH$_{14}$ (B), Au$_{15}$GSH$_{13}$ (C), and Au$_{11}$GSH$_{11}$ (D), on both glass (red) and adsorbed on TiO$_2$ (black). The difference in relaxation rates determined from these kinetic traces was used to estimate the electron transfer rate from clusters to TiO$_2$, as discussed in the main text.