SUPPORTING INFORMATION

Synthesis, characterization, and testing of supported Au catalysts prepared from atomically-tailored $Au_{38}(SC_{12}H_{25})_{24}$ clusters

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Characterization of clusters using wide angle X-ray scattering (WAXS). WAXS measurements were performed at the SAXS/WAXS beamline at CAMD. Samples were measured as a toluene solution (1 mg/mL) in a 1 mm diameter glass capillary. WAXS patterns were collected using an imaging plate (Molecular Dynamics storage phosphor screen) in a Q-range between 0.1 and 2 $Å^{-1}$.Data analysis was conducted using "Igor Pro" and "Fit2D" software.

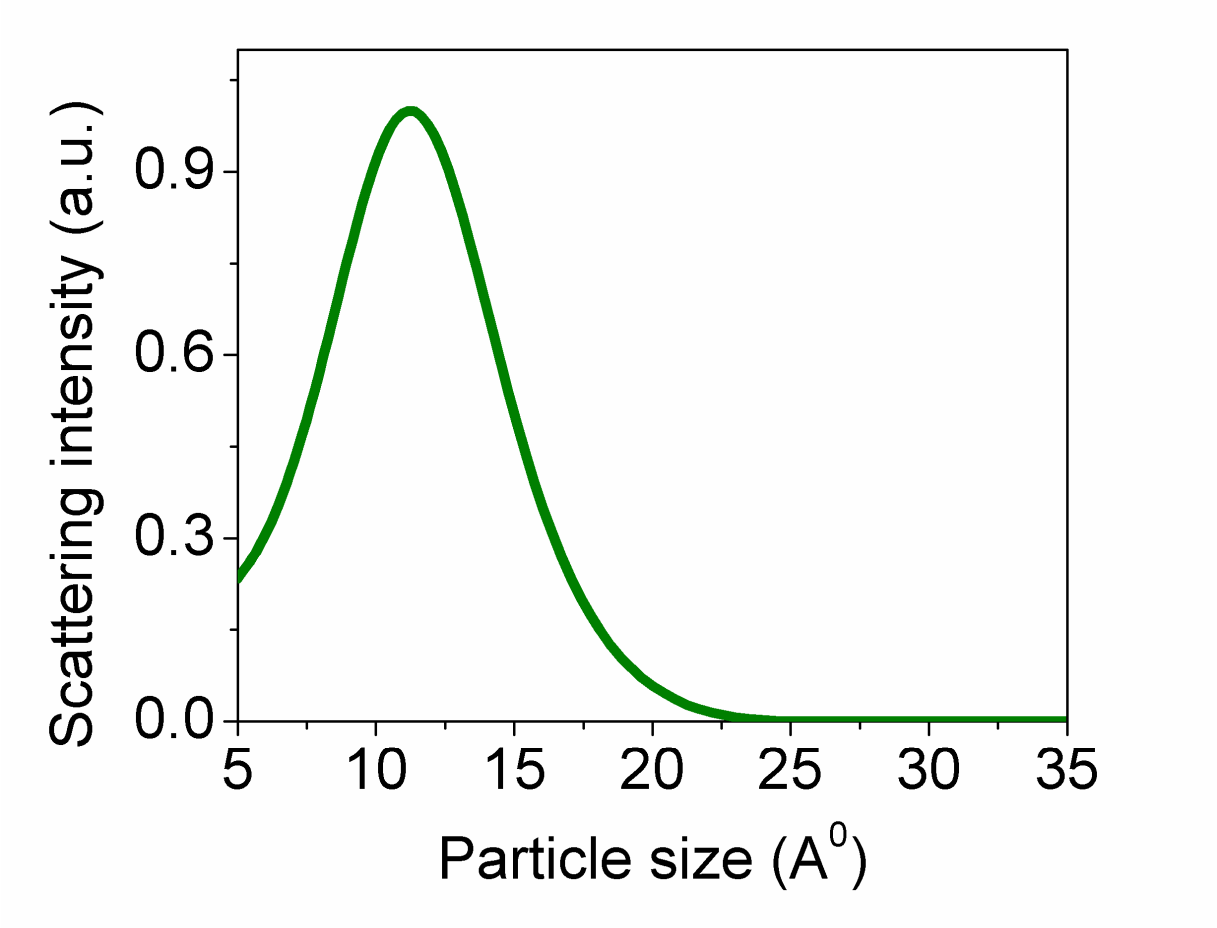

Figure S1. Best-fit WAXS particle size distribution of the gold thiolate clusters.

EXAFS spectra showing [chi(k) * k^2 vs. k] for the catalyst samples.

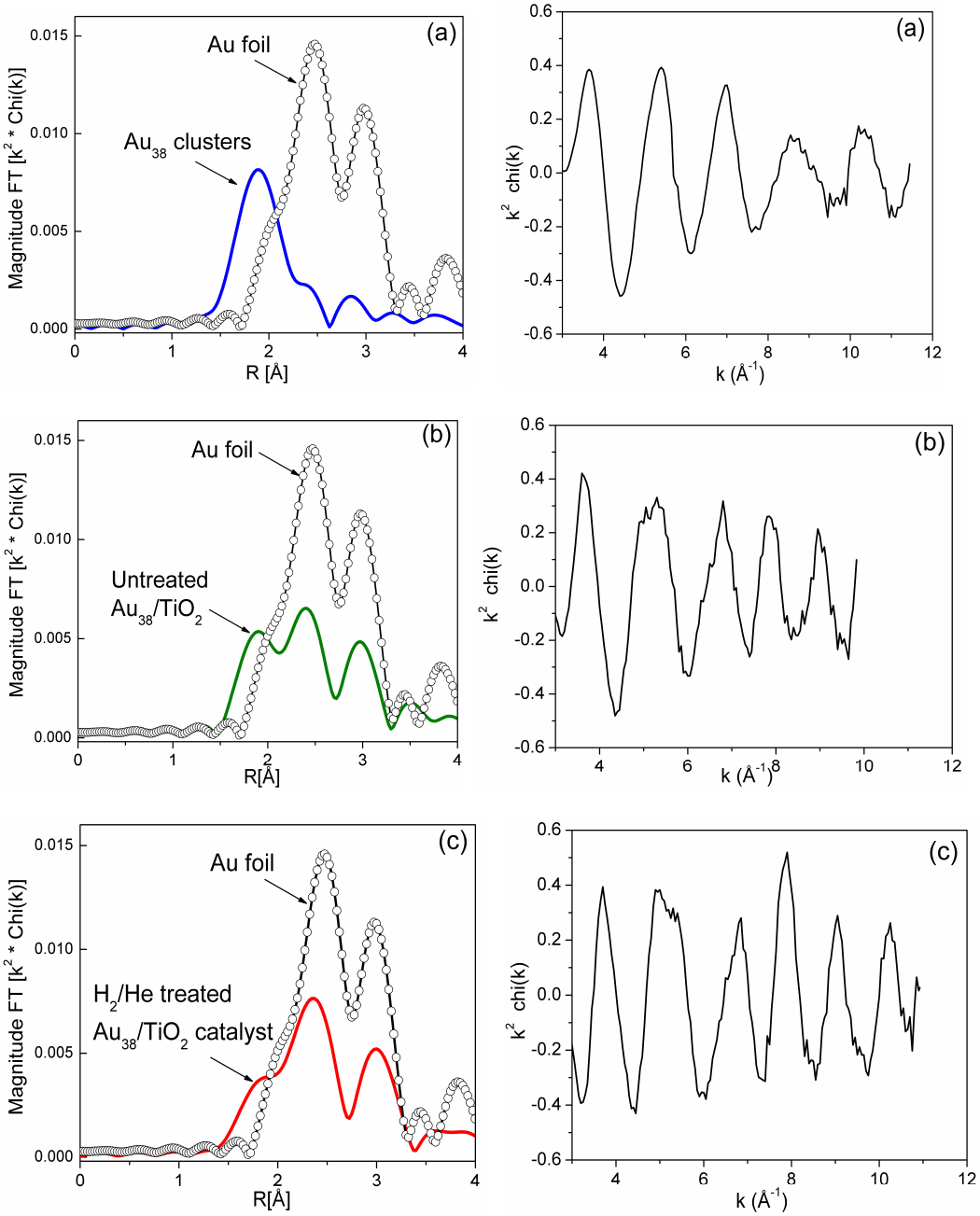

Figure S2. XAS spectrum (k^2:Δk = 2.6 to 11.3 $Å^{-1}$) of the catalyst samples showing EXAFS spectra of a) Au clusters, b) Au_{38}/TiO_2 catalysts treated in air at 100 °C, and c) Au_{38}/TiO_2 catalysts treated with H_2/He at 400 °C