Supporting Information for: Controlling O coverage and stability by alloying Au and Ag

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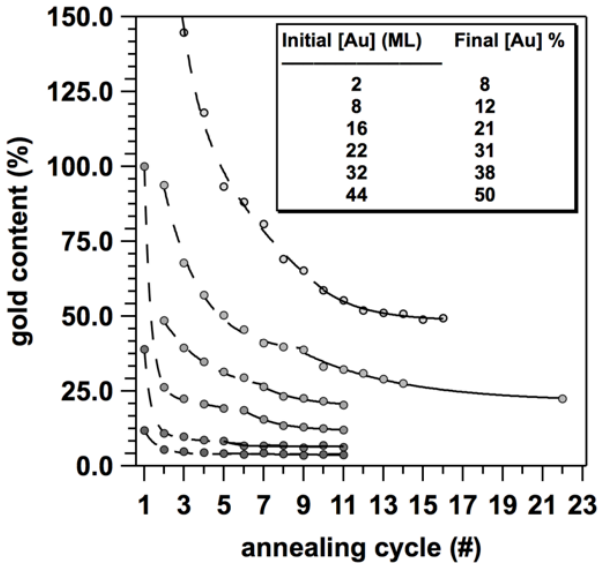

Figure S1: Surface gold concentrations for successive annealings of in situ-generated Au/Ag (110) alloys: alloys were annealed to 630 K (dashed lines); alloys were then exposed to 75000 L dioxygen and annealed to 630 K (solid lines). Note that the figure is scaled to display optimal resolution between experiments and the initial data points of traces 4, 5, and 6 are not displayed.

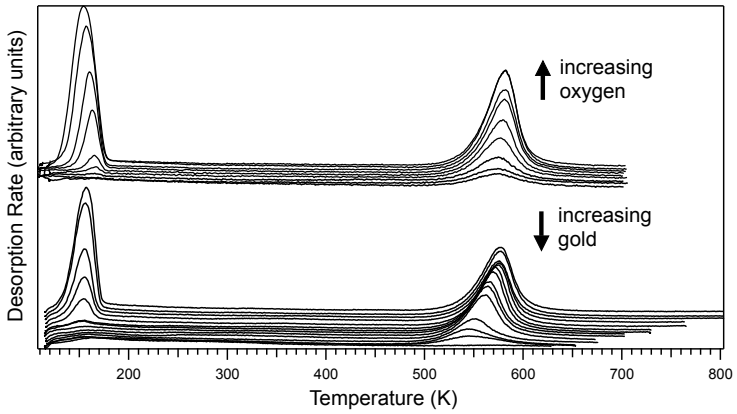

Figure S2: Full traces for TPDs dosed at 125 K.

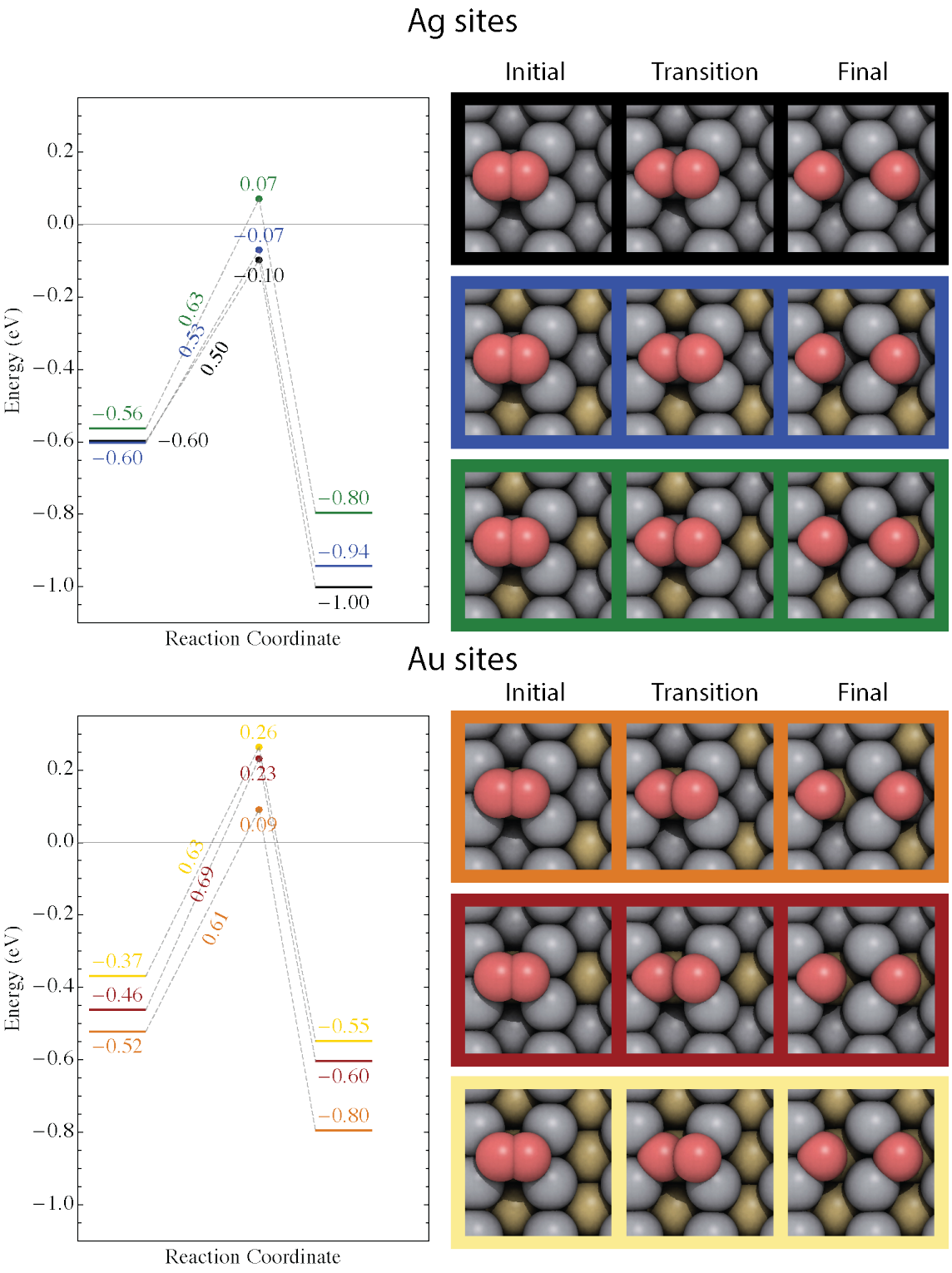

Figure S3: The potential energy surface for each case from DFT, with initial, transition state, and final structures. The Au concentrations are, from top to bottom: 0%, 25%, 25%, 25%, 25%, 50%.

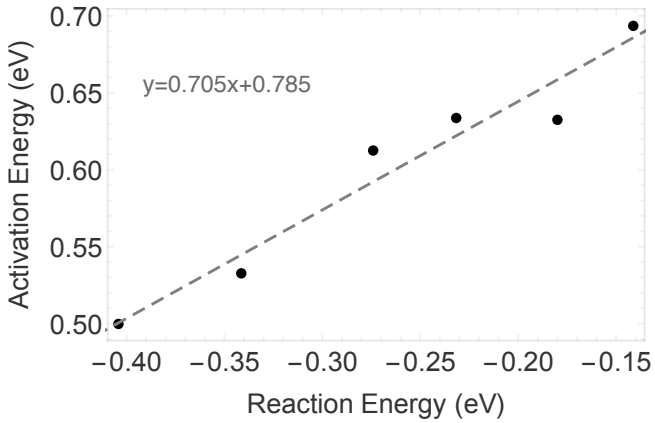

Figure S4: BEP relation for O_2 dissociation on all of the surfaces tested.

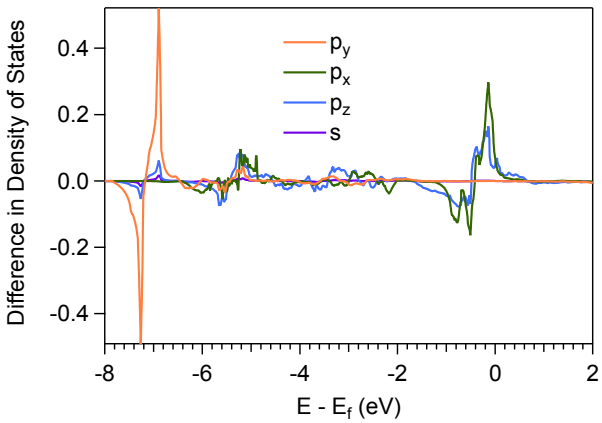

Figure S5: Difference in density of states, projected on an oxygen atom, between O_2 adsorbed on two different AgAu(110) surfaces with different configurations, as shown in the main text. (The configuration with Au atoms aligned in the [100] direction is subtracted from the configuration where the Au atoms are offset in every other trough.) The O−O axis is along the y-direction. This demonstrates that the Au atom in the next trough interacts with the σ-2p orbital.