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Supporting Information:

Dynamics of CO_2-Plasticized Electron Transport in Au Nanoparticle Films: Opposing Effects of Tunneling Distance and Local Site Mobility

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Table S-1. Rest potential (E_R) and Charge-State Composition of Mixed-Valent Au_{38} Nanoparticles Prepared by Ce(IV) Oxidation

E_R (V *vs.* Ag/Ag^+)	Au_{38}^{0} (%)[a]	Au_{38}^{1+} (%)[a]
– 0.472	99	1
– 0. 390	78	22
– 0.365	68	32
– 0.352	58	42

a. Calculated from the Nernst equation: $E_R - E^{\circ'} = 0.059 \log \frac{[Au_{38}^{1+}]}{[Au_{38}^{0}]}$, where $E^{\circ'}$ = – 0.357 V taken from the half-wave potential of the $Au_{38}^{1+/0}$ couple.

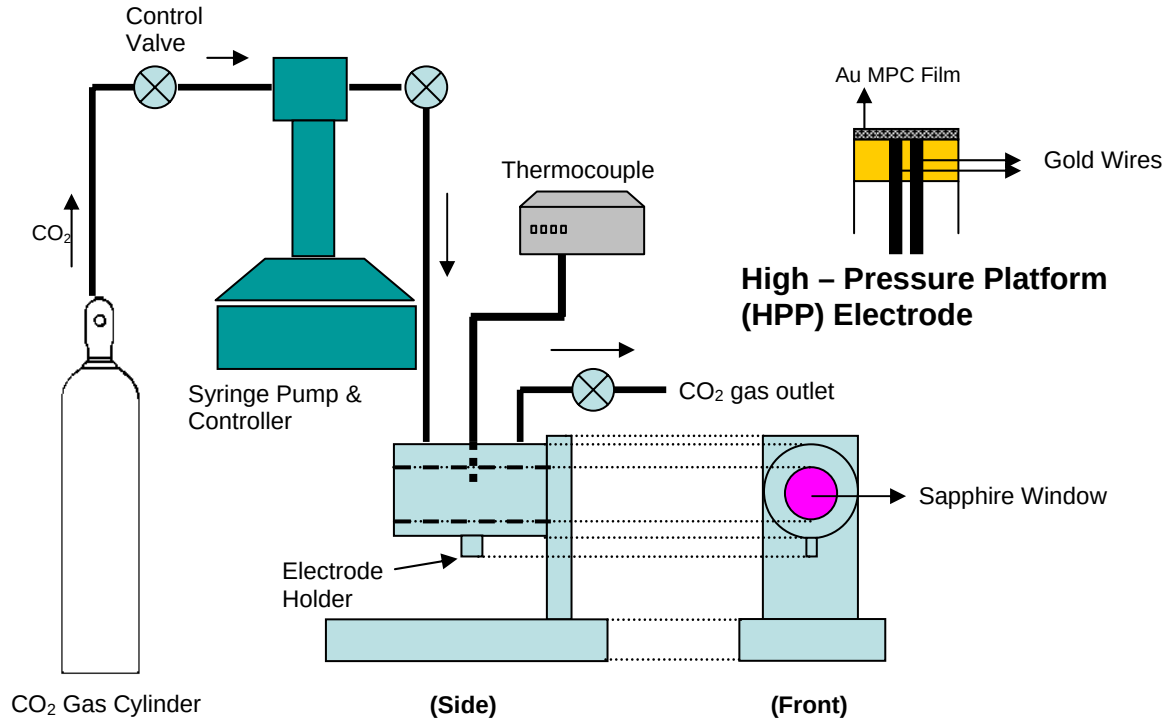

Figure S-1. Diagrams of a high-pressure σ_{EL} measurement cell and a high-pressure platform (HPP) electrode.

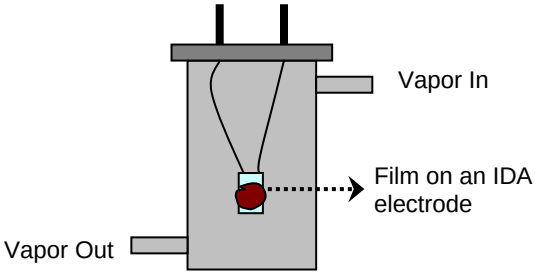

Figure S-2. Diagram of a flow cell

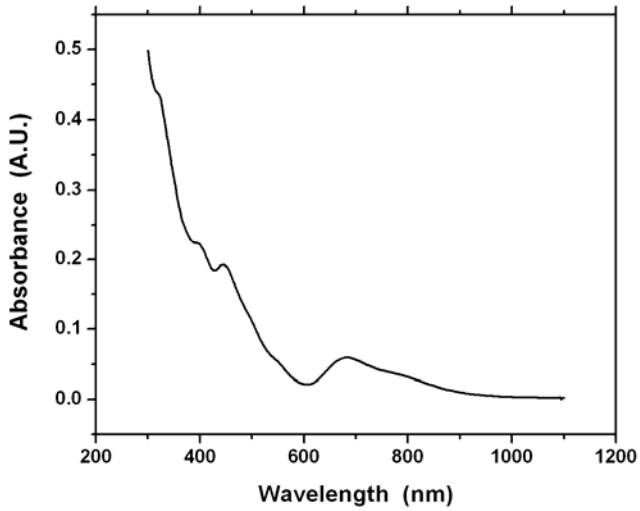

Figure S-3. UV-vis spectrum of Au_{38} MPCs in CH_2Cl_2.

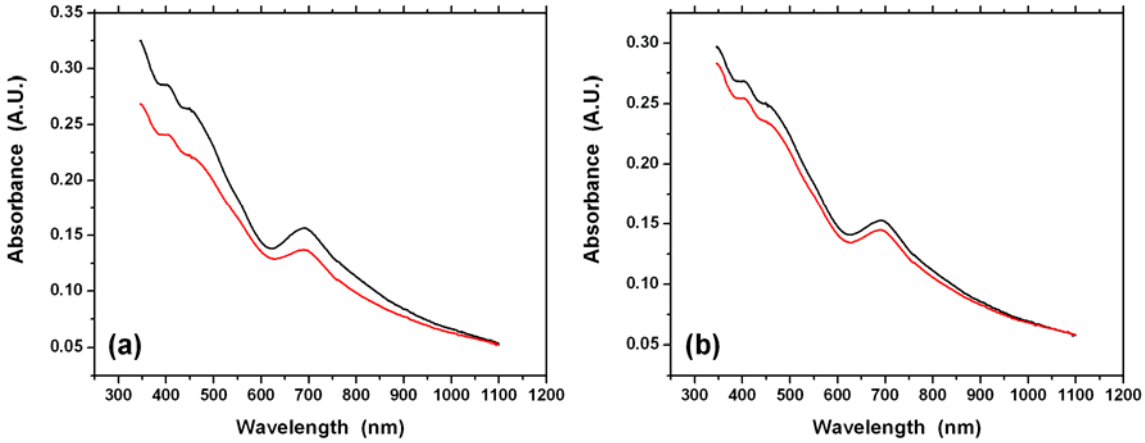

Figure S-4. UV-Vis spectra of Au_{38} films on glass in (a) ethanol and (b) hexane. In both (a) and (b), black line spectra were measured immediately after the film slide was immersed in liquid solvents (0 min), and red lines were measured after 20 min in liquid solvents.

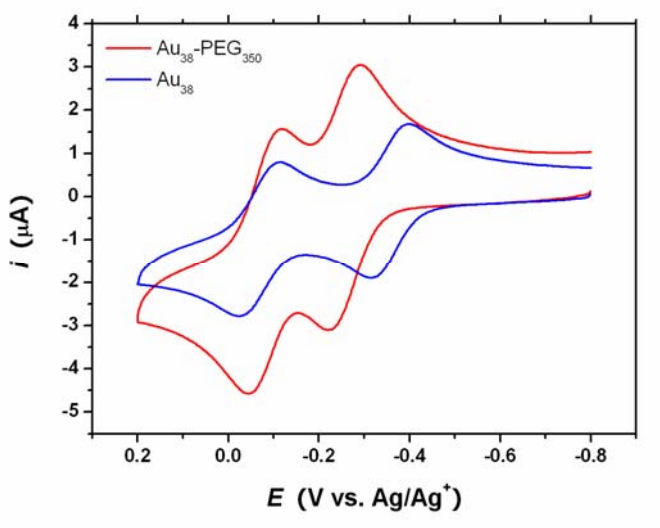

Figure S-5. Cyclic voltammograms of Au_{38} (5 mg, blue line) and Au_{38}-PEG_{350} (8 mg, red line) measured at the Pt-disk electrode (2 mm diameter) at 100 mV/s. Solvents used for Au_{38} and Au_{38}-PEG_{350} MPCs were CH_2Cl_2 and CH_3CN (5 mL each), respectively, containing 0.1 M $Bu_4N^+ClO_4^-$.