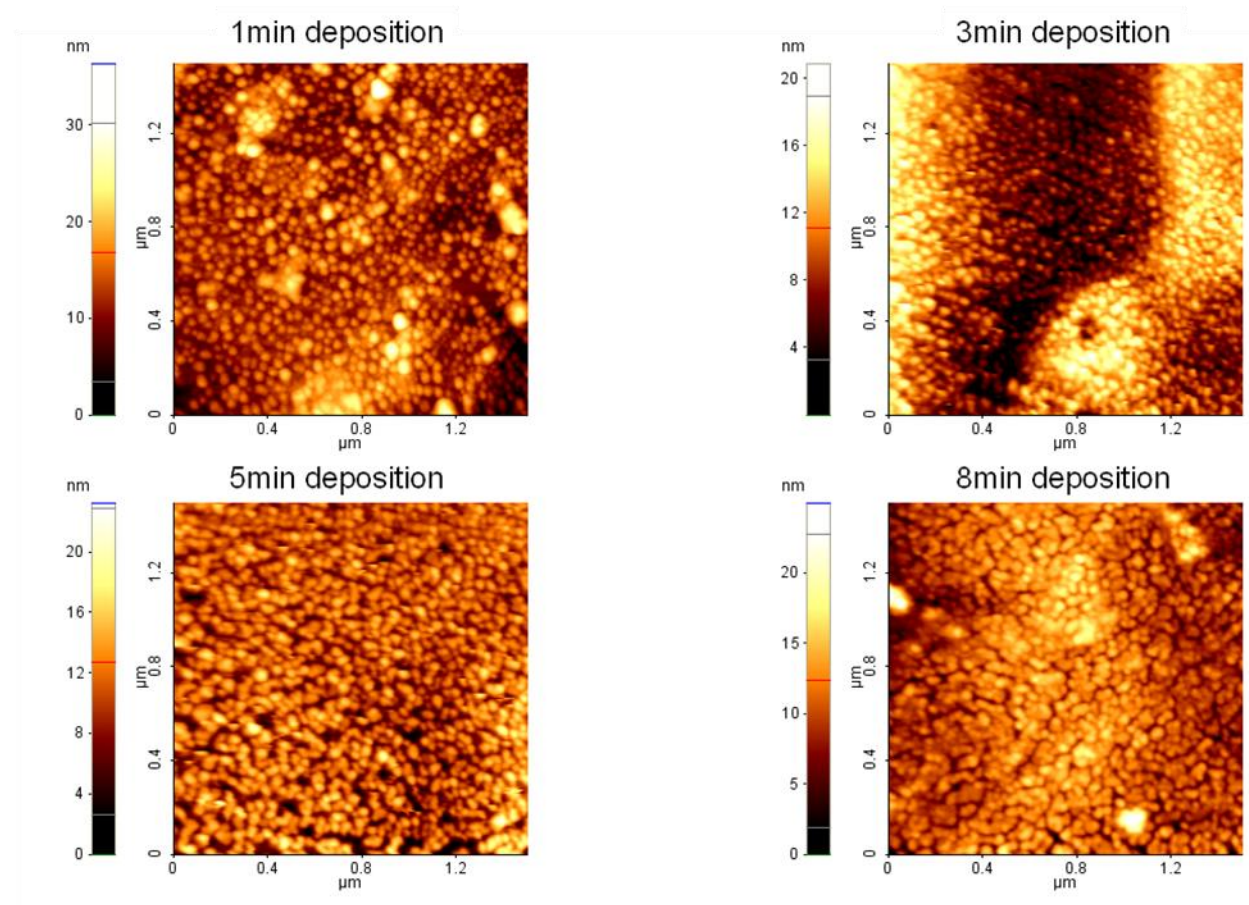
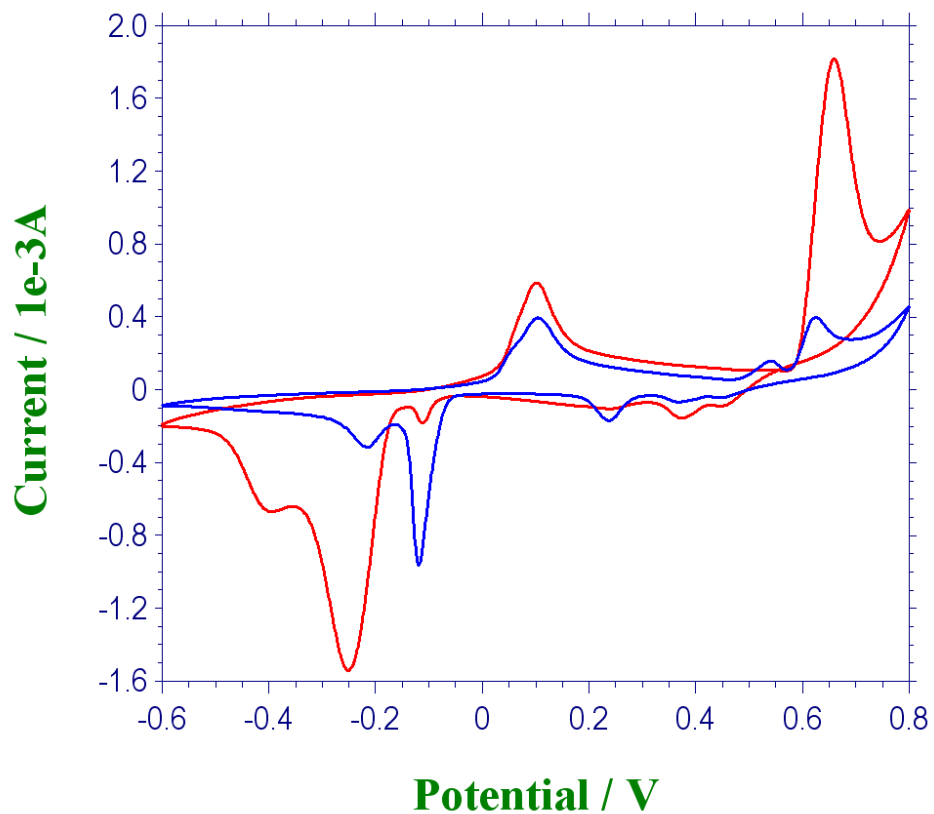


## Supplemental

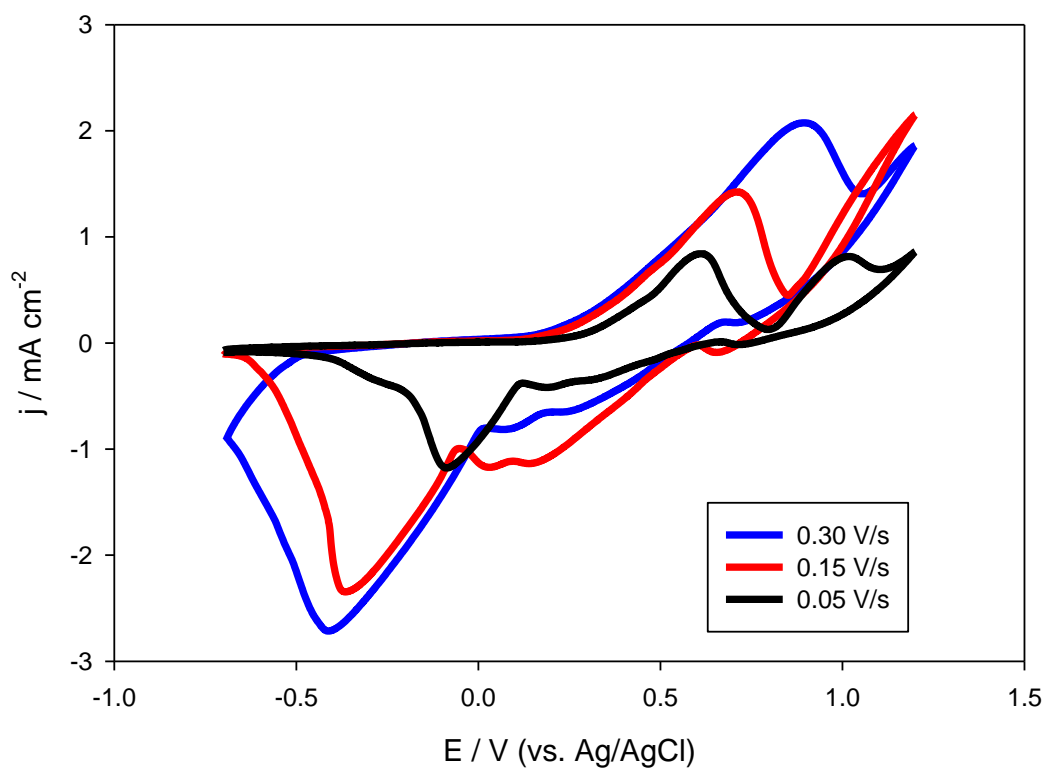
**Fig. S1** AFM images of Ag NPs on HOPG. NPs were deposited for 1, 3, 5 and 8 min on different substrates. At 1 min deposition time, individual particles are visible. As the deposition time is increased, the spacing among the NPs decreases. At 8 min, individual particles are no longer distinguishable forming a film on the substrate.



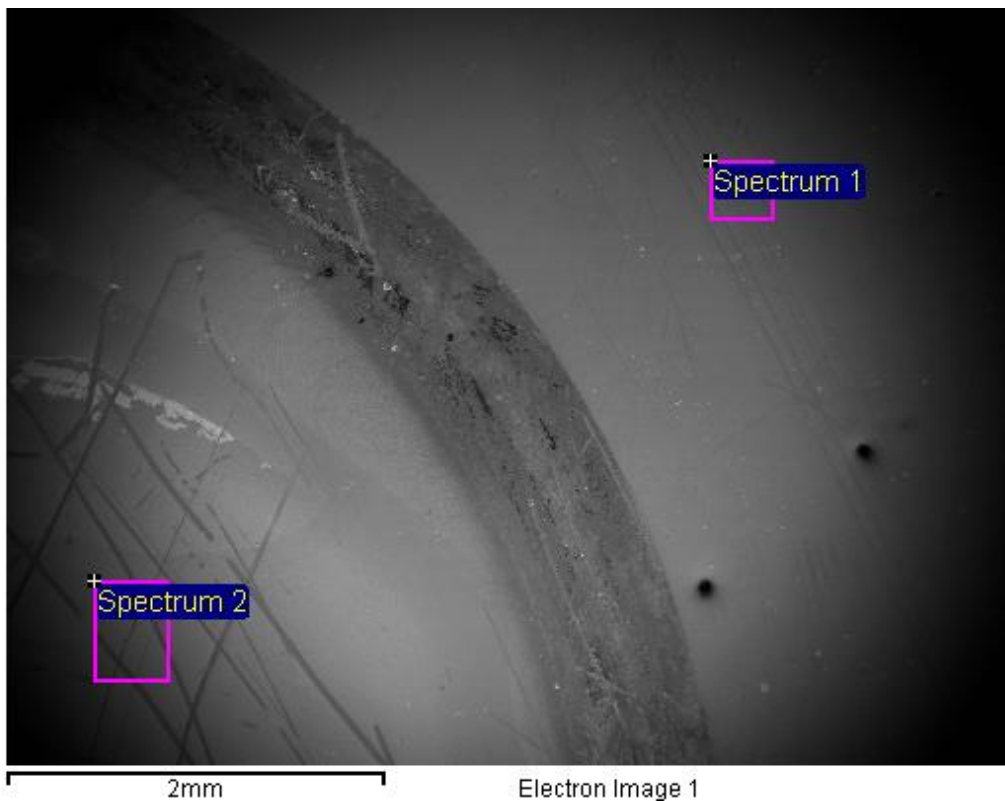
**Fig. S2** CV scans of unexposed Ag NP–decorated ITO in degassed 8.0 M KOH at 0.15 V/s vs. Ag/AgCl. At high–numbered cycles, the CV scans show the surface oxide peak at *ca.* -0.17 V. Red CV scan represents the 55<sup>th</sup> cycle while the blue is the 80<sup>th</sup> cycle.



**Fig. S3** Hysteresis characteristic of impeded charge transport: To test for the presence of transport-limited kinetics, the voltage scan rate was varied over the relative narrow range of 0.05 and 0.3 V/s. In an attempt to reduce  $\beta$ -oxide formation, this test was performed in 50 mM KOH, as opposed to 8.0 M. As seen in the CV scans, the major peaks have shifted steadily to lower absolute voltages as the scan rate is decreased. The decrease in overpotential observed as the scan rate is decreased is characteristic of charge-transport limited redox chemistry. For polycrystalline Ag, varying the scan rate between 0.05 and 0.3 V/s in 50 mM KOH showed minor changes in peak positioning.



**Fig. S4** EDX of Ag NP–decorated ITO exposed to 2–CEES: Spectrum 1 represents an area of the sample not exposed to mimic while Spectrum 2 represents an area exposed to 2–CEES. The atomic percentage of Ag in both samples are virtually unchanged (the low percentage on the exposed area is attributed at aggregates formed during cycling)



Processing option : All elements analysed (Normalised)

Spectrum	In stats.	O	Ag	In
Spectrum 1	Yes	63.30	7.89	28.81
Spectrum 2	Yes	64.04	5.52	30.45
Mean		63.67	6.70	29.63
Std. deviation		0.52	1.68	1.16
Max.		64.04	7.89	30.45
Min.		63.30	5.52	28.81