Underpotential and Overpotential Electrocrystallization of Semiconducting Silver-Tetracyanoquinodimethane onto Gold Substrates from an Ionic Liquid

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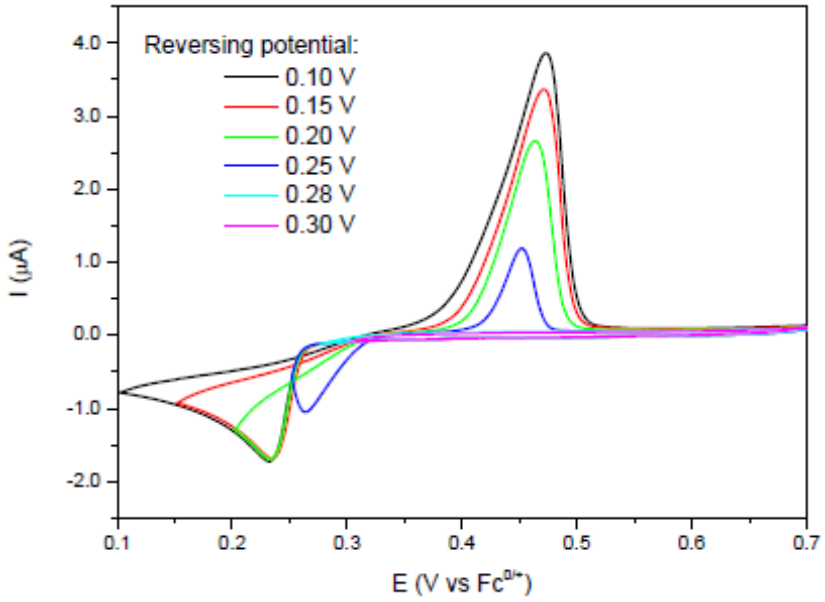

Figure S1. Cyclic voltammogram obtained at a Pt electrode for reduction of a 5 mM Ag^{+} in $BMIMBF_4$ at a scan rate of 20 mV s^{-1} when the switching potential is varied from 0.10 to 0.30 V.

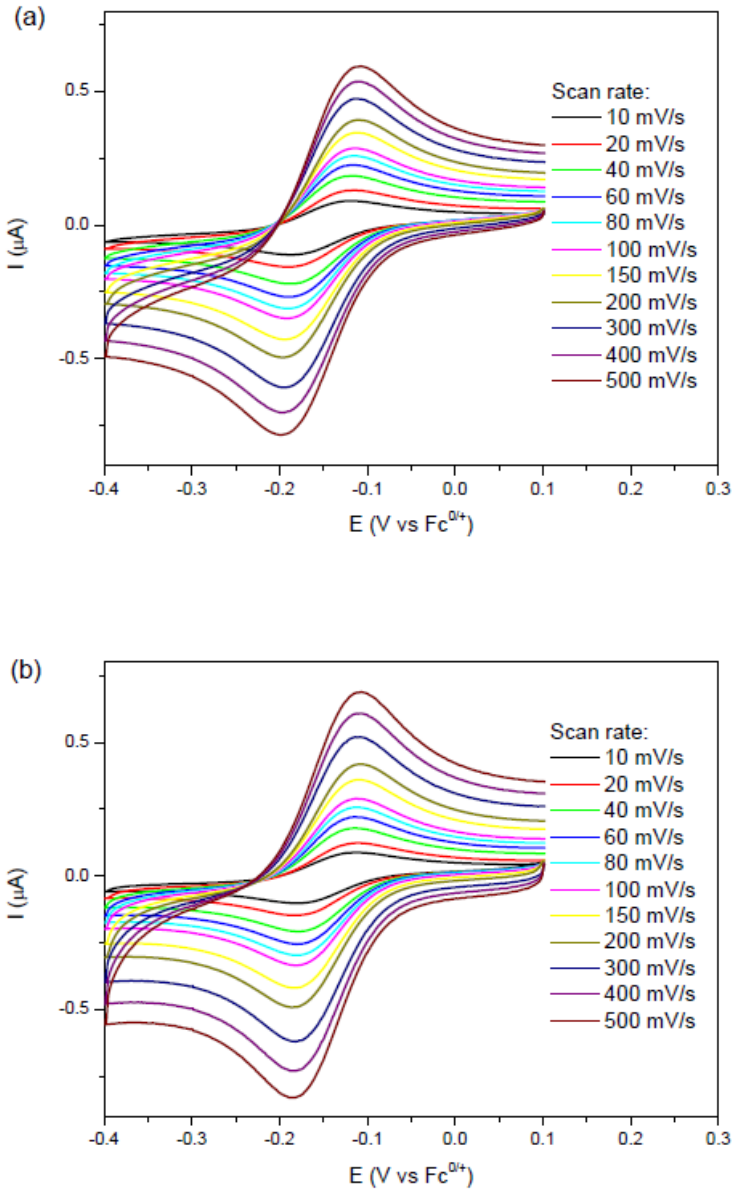

Figure S2 Cyclic voltammograms obtained at Au (a) and Pt (b) electrodes for reductions of a 3 mM TCNQ in $BMIMBF_4$ with scan rates of 10-500 mV/s.

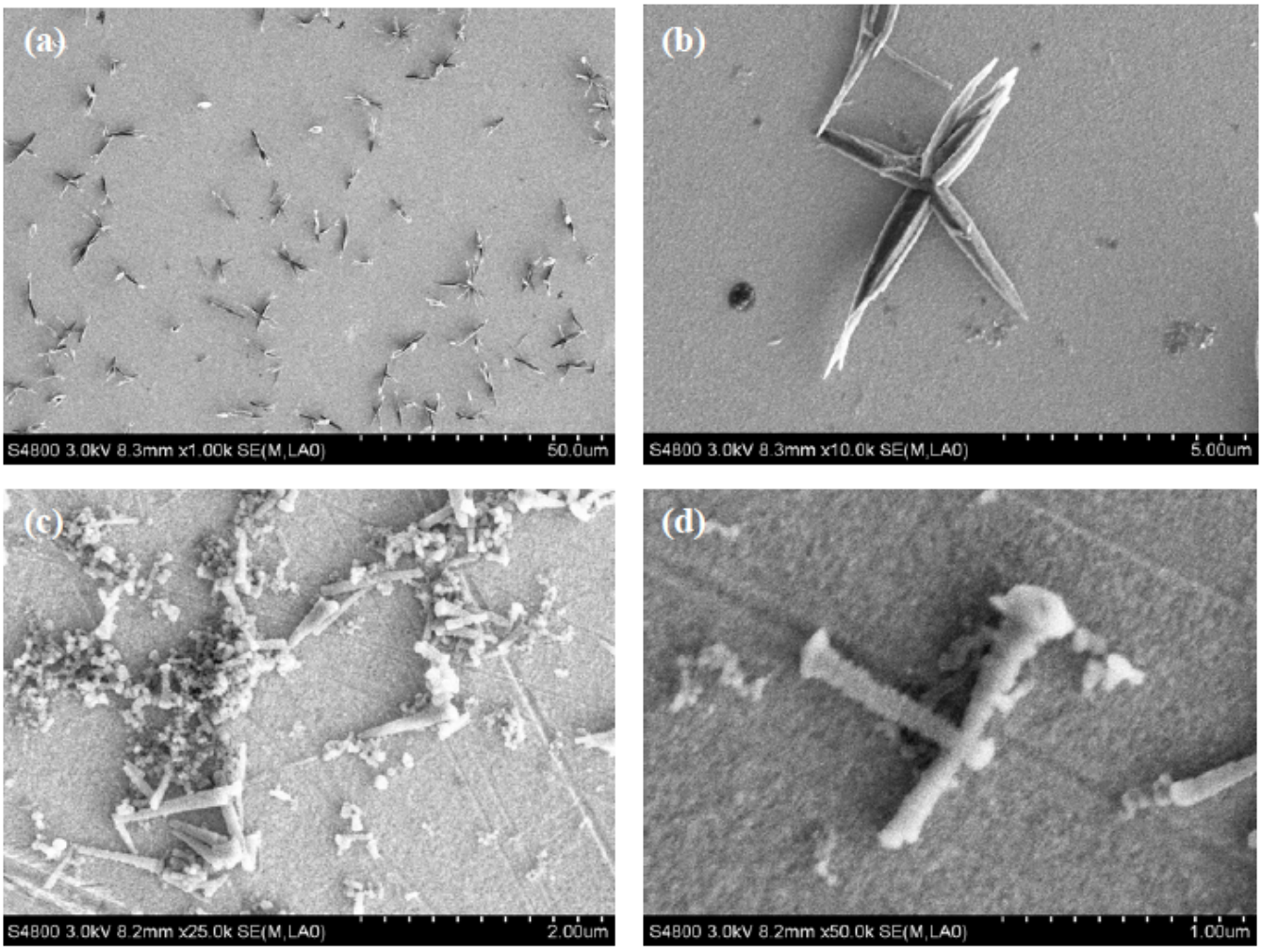

Figure S3. SEM images of AgTCNQ formed by electrocrystallization from $BMIMBF_4$ containing 4.9 mM $Ag(MeCN)_4BF_4$ and 4.8 mM TCNQ onto a Au electrode when the potential is held at 0.3 V (a,b) and -0.2 V (c,d) vs $Fc^{0/+}$ for 300 s.

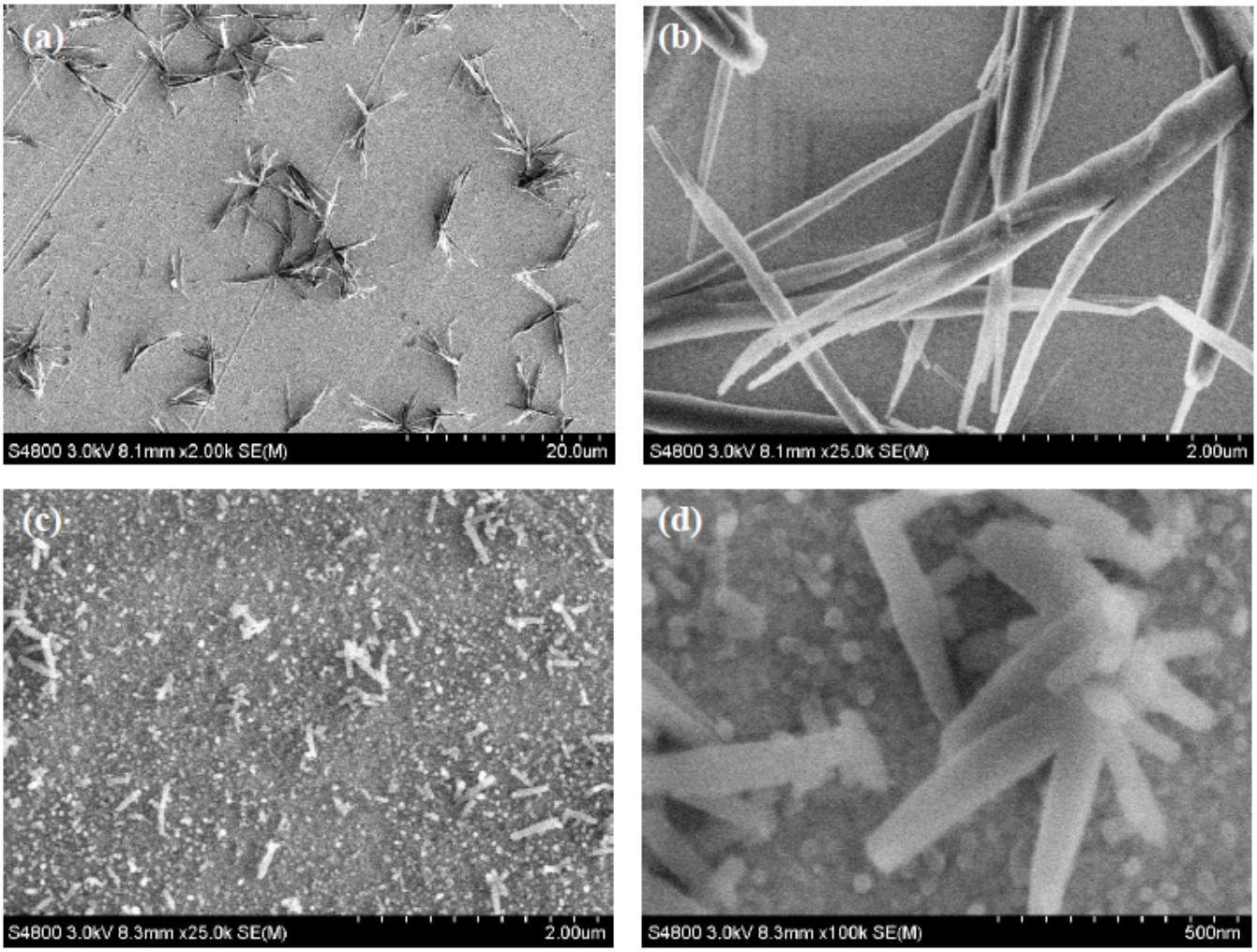

Figure S4. SEM images of AgTCNQ formed by electrocrystallization from $BMIMBF_4$ containing 6.6 mM $Ag(MeCN)_4BF_4$ and 4.8 mM TCNQ onto a Au electrode when the potential is held at 0.3 V (a,b) and -0.2 V (c,d) vs $Fc^{0/+}$ for 300 s.

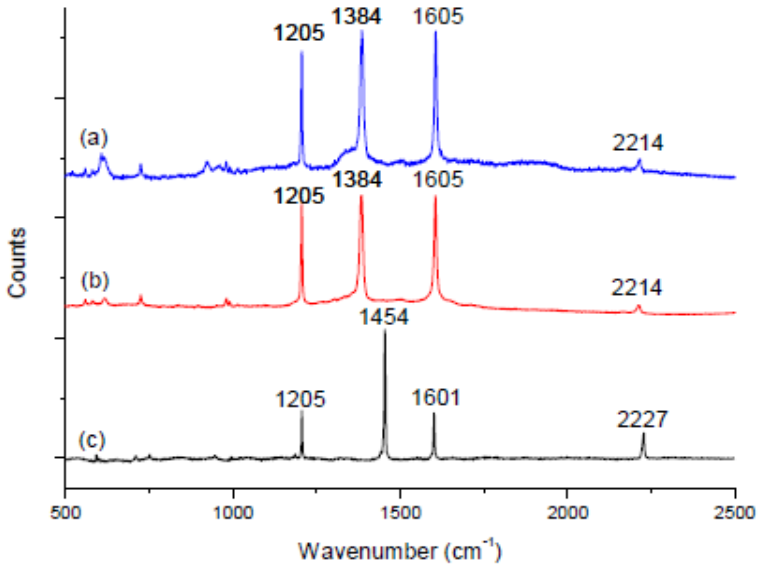

Figure S5. Raman spectra of (a, b) electrocrystallized AgTCNQ on a Au electrode from $BMIMF_4$ containing 10.0 mM $Ag(MeCN)_4BF_4$ and 4.8 mM TCNQ at (a) 0.3 V and (b) -0.2 V vs $Fc^{0/+}$, (c) TCNQ crystals.