Supplimentary Information

A Mechanistic Study on the Electrocatalysis of Pu(IV)/Pu(III) Couple at Platinum Electrode modified with Single-walled Carbon Nanotubes (SWCNTs) and Polyaniline (PANI)

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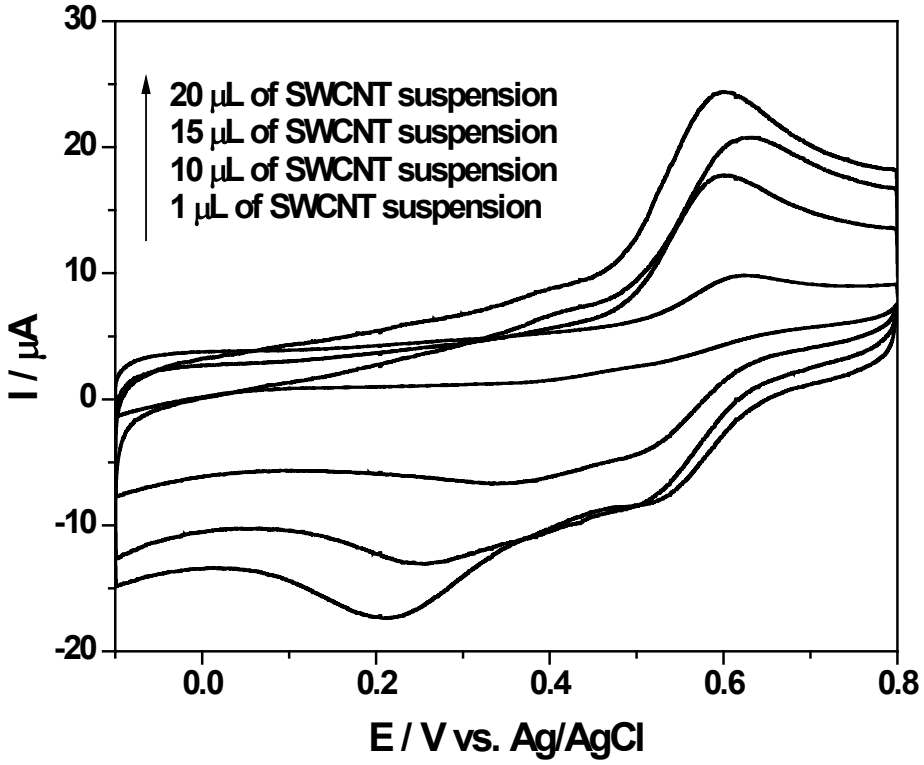

Fig. S1. The cyclic voltammogram of 25 mM Pu(IV) in 1 M H_2SO_4 at a scan rate of 20 mV/s on SWCNT-Pt prepared by 1,10,15 and 20 μL of SWCNT suspension in 1:4 mixture of nafion and water.

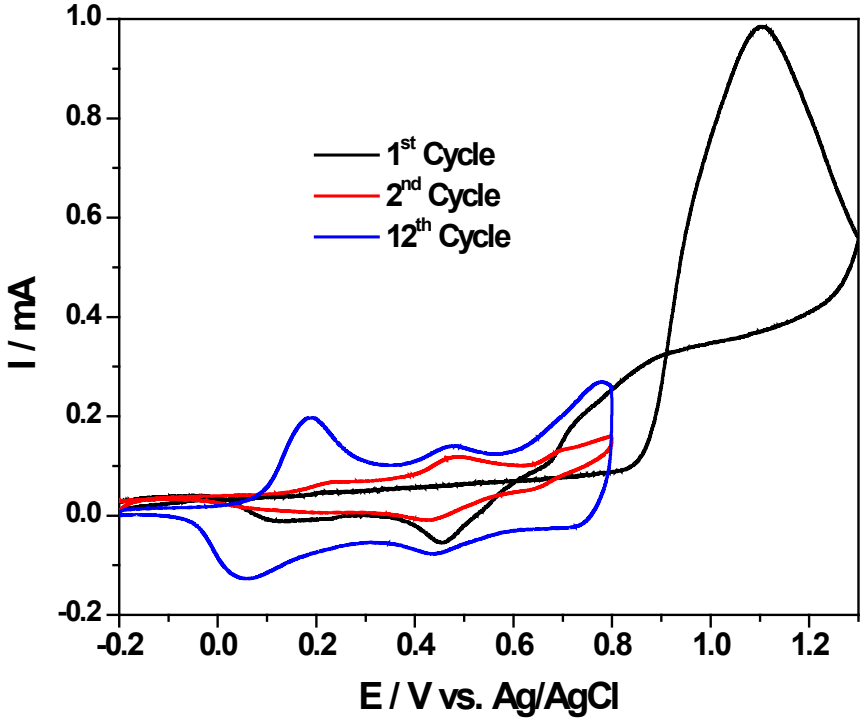

Fig. S2. Cyclic voltammograms during the electropolymerization of aniline on Pt in 0.1 M aniline + 0.5 M H_2SO_4 solution at a scan rate of 0.1 V s^{-1} for 1st, 2nd and 12th cycles.

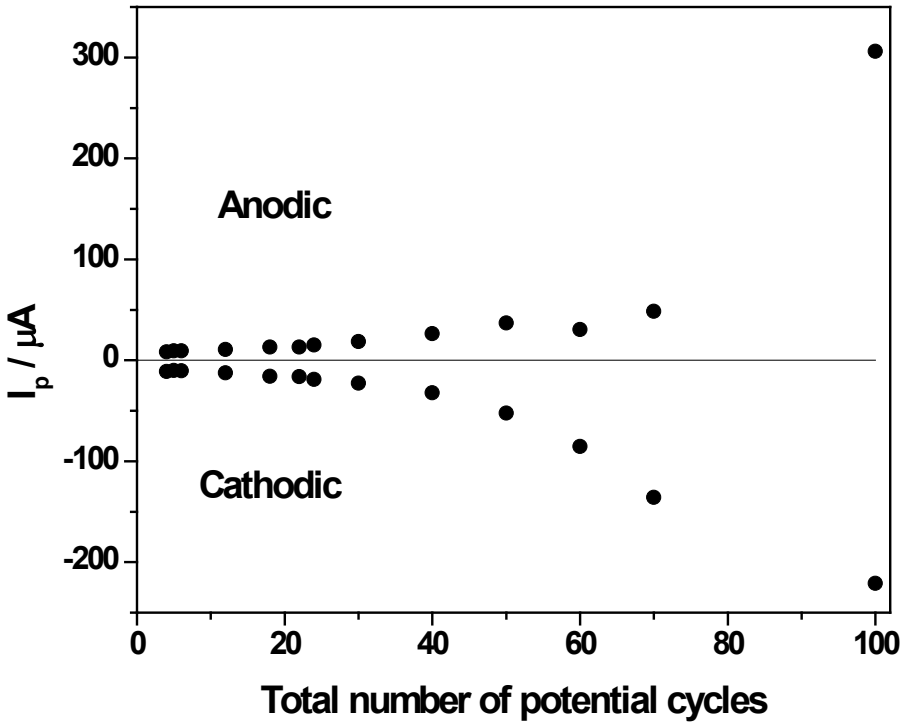

Fig. S3. The cathodic and anodic peak currents of 25 mM Pu(IV)/Pu(III) couple in 1 M H_2SO_4 on PANI-Pt at a scan rate of 20 mV/s as a function of total number of potential cycles during the polymerization of aniline on Pt.

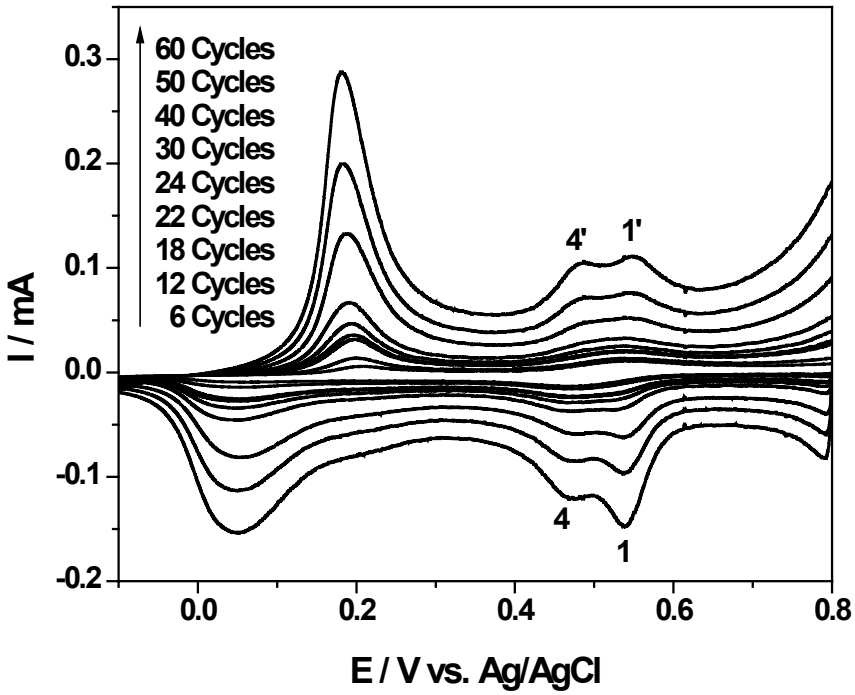

Fig. S4. The cyclic voltammogram of 25 mM Pu(IV) in 1 M H_2SO_4 on PANI-Pt at a scan rate of 20 mV/s with respect to the total number of potential cycles during the polymerization of aniline on Pt.

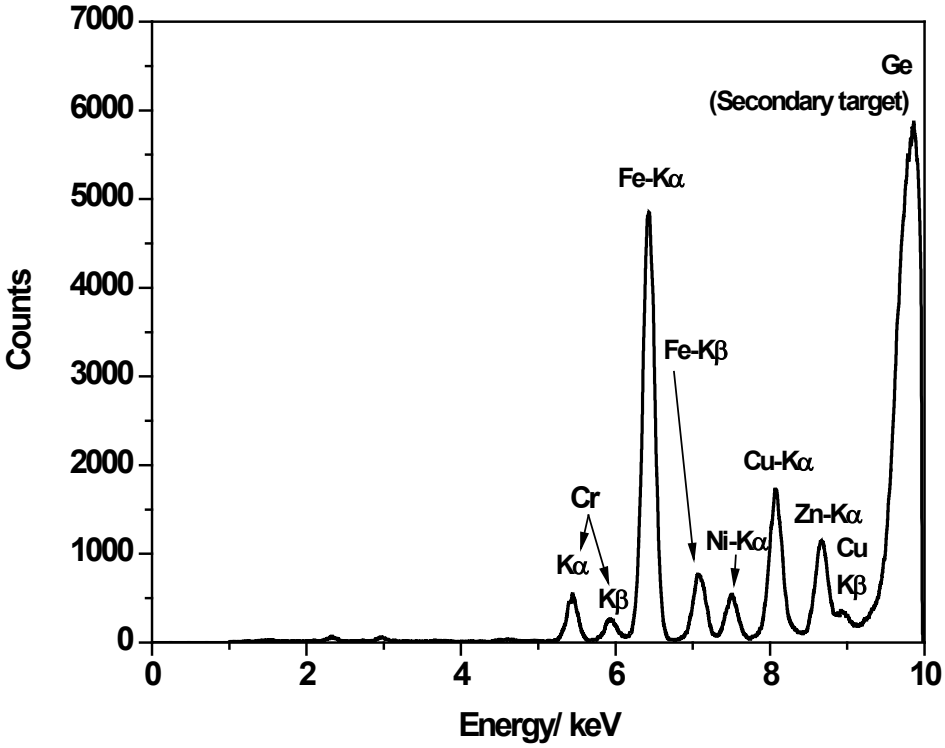

Fig. S5. EDXRF spectrum of SWCNTs as received from the supplier.

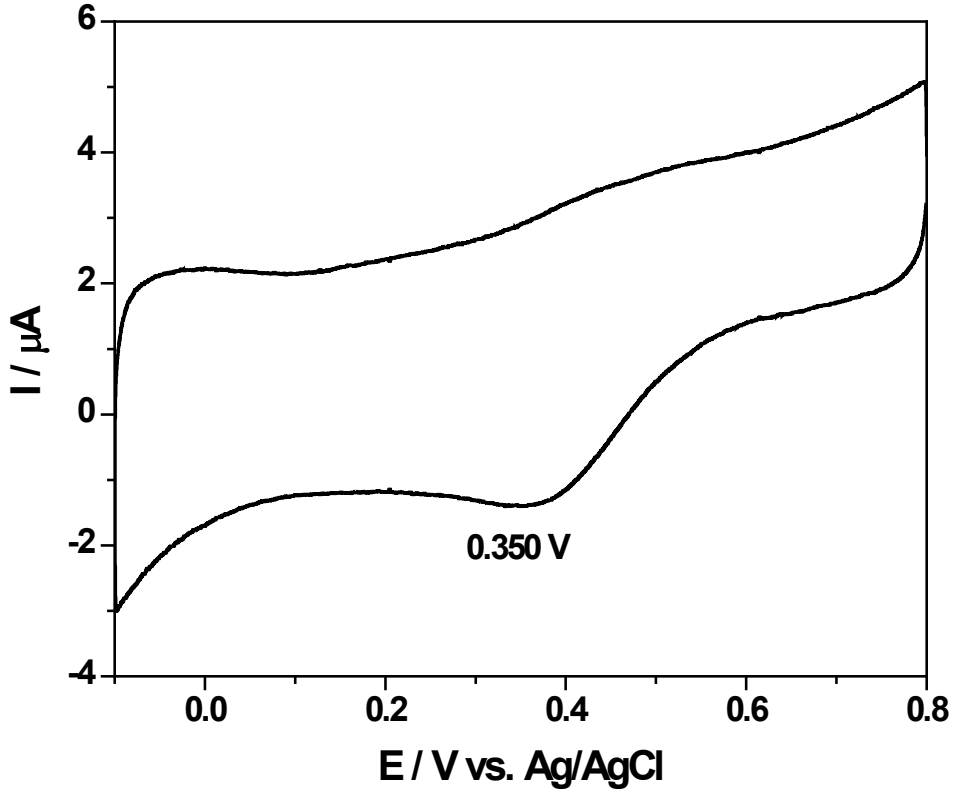

Fig. S6. Cyclic voltammogram of SWCNT-Pt in 1 M H_2SO_4 at a scan rate of 20 mV/s.

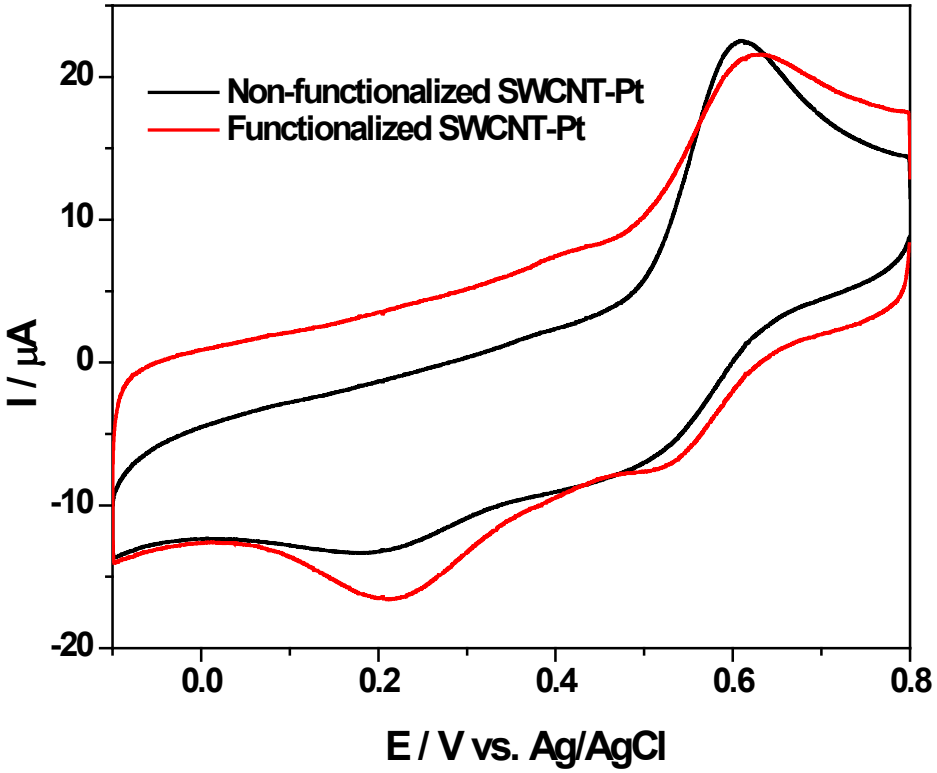

Fig. S7. Cyclic voltammogram of 25 mM Pu(IV) in 1 M H_2SO_4 on functionalized and non-functionalized SWCNT-Pt at a scan rate of 20 mV/s.

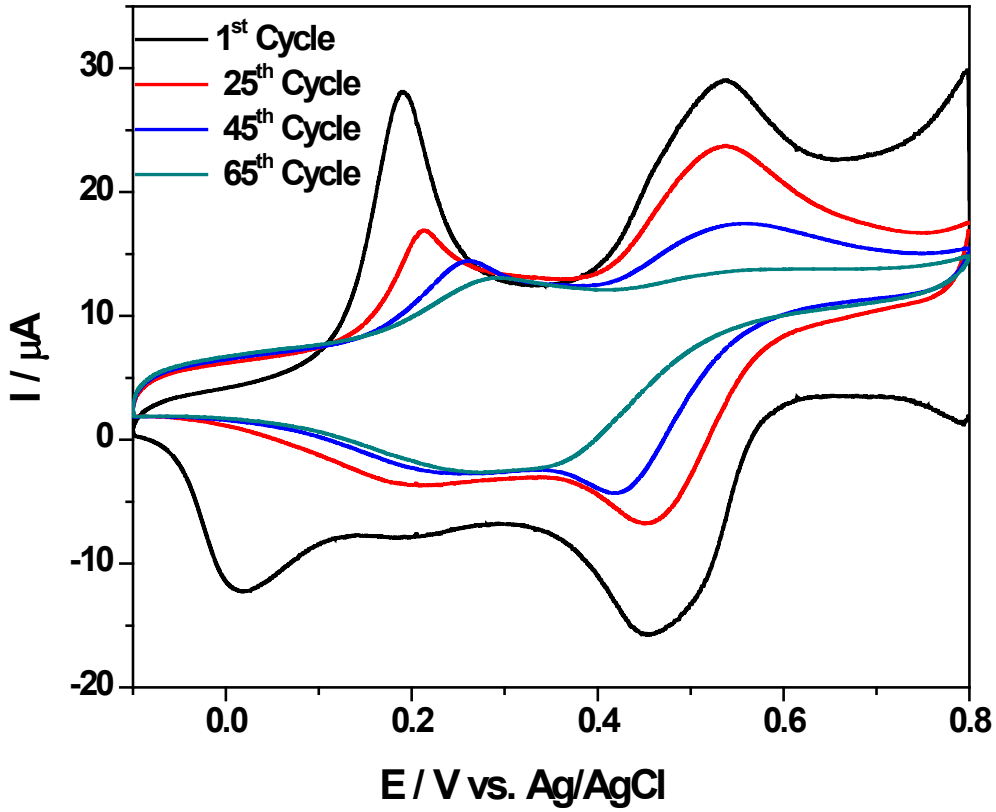

Fig. S8. Cyclic voltammogram of 25 mM Pu(IV) in 1 M H_2SO_4 on PANI-Pt at a scan rate of 20 mV/s for 1st, 25th, 45th and 65th cycles under continuous operation.