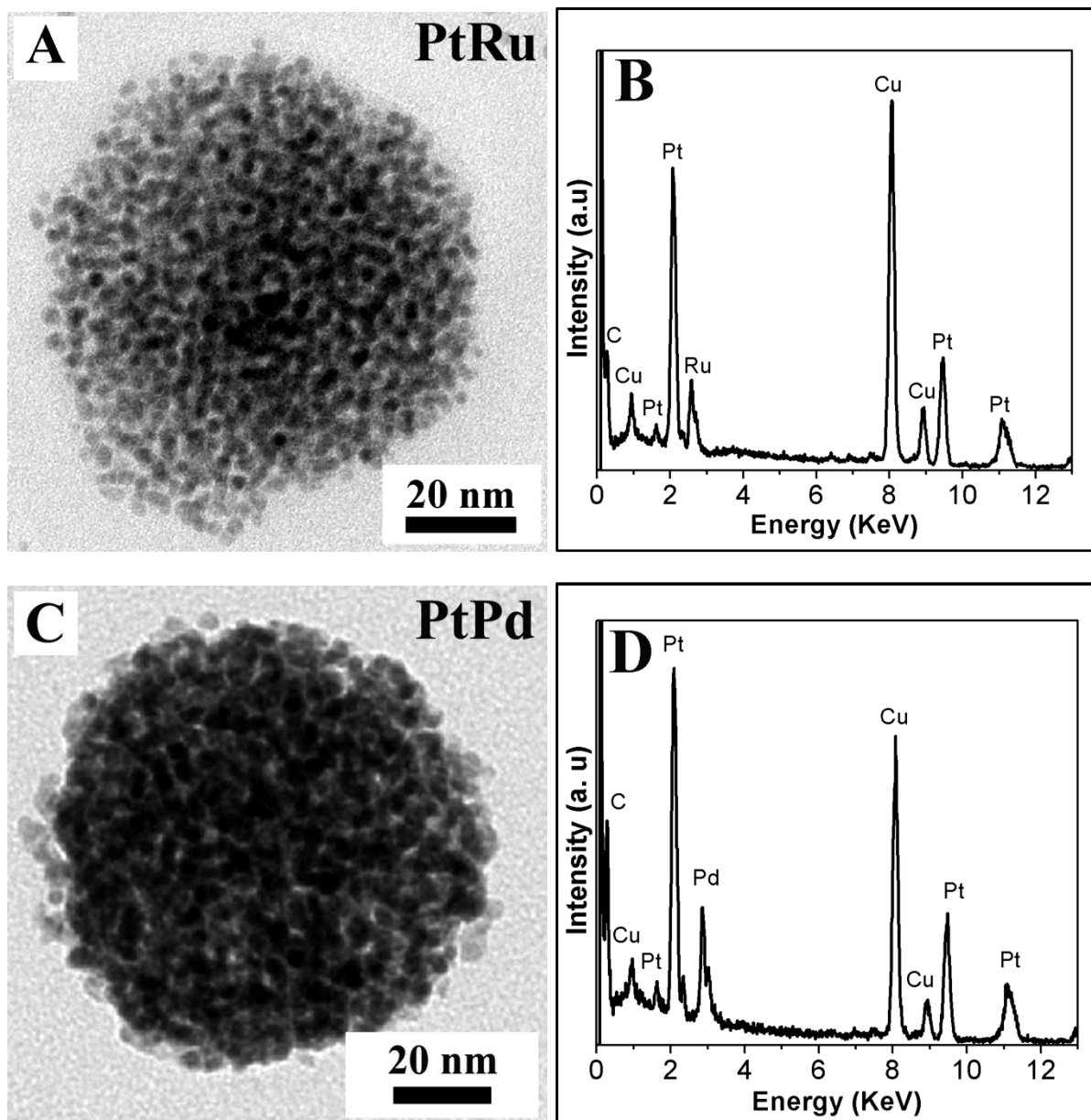


Supplementary Information

Figure S1. TEM images of a single cluster (A, C, E, and G) and corresponding XEDS spectrum (B, D, F, and H) of porous aggregates of PtRu, PtPd, AuPt and AuPd.



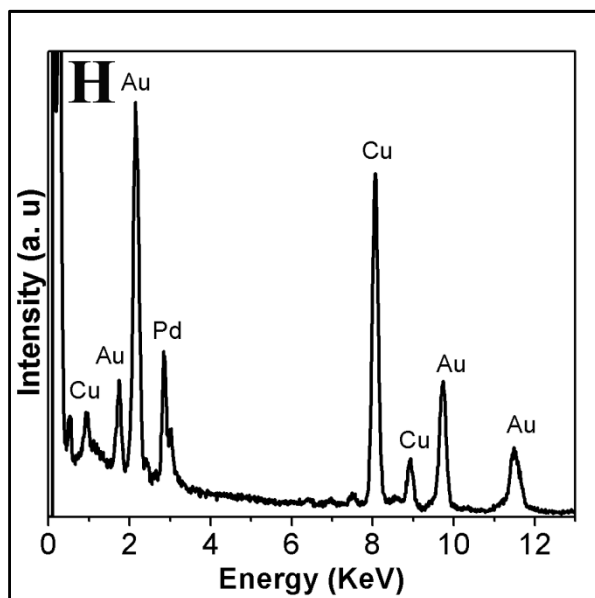
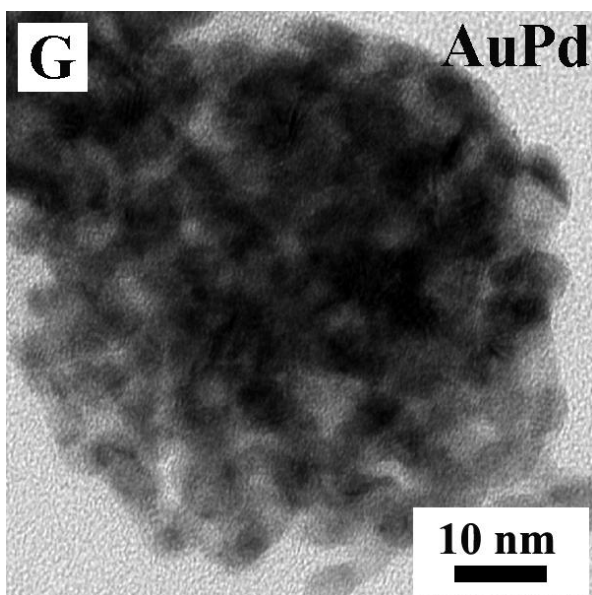
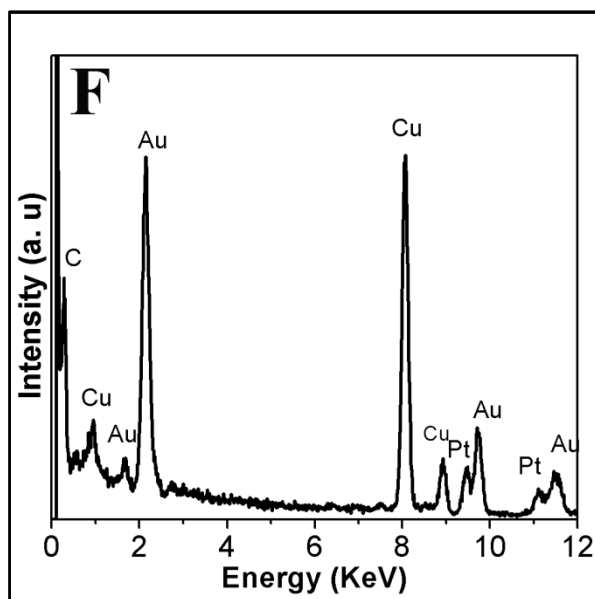
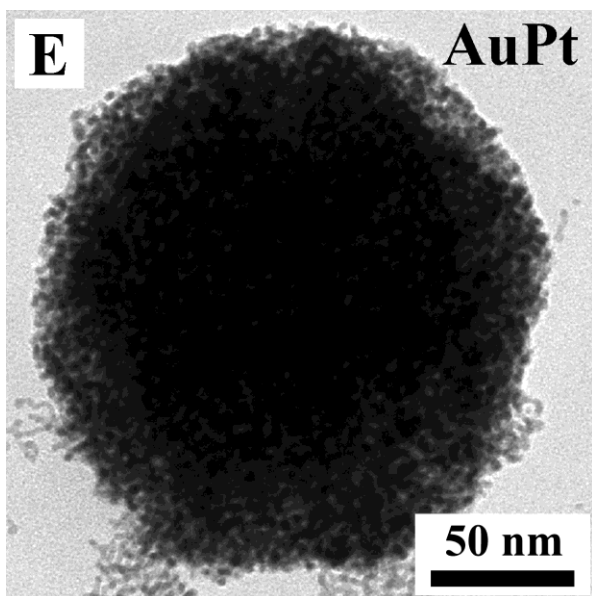


Figure S2. SEM image of the PtRu, PtPd, AuPt and AuPd mesoporous aggregates.

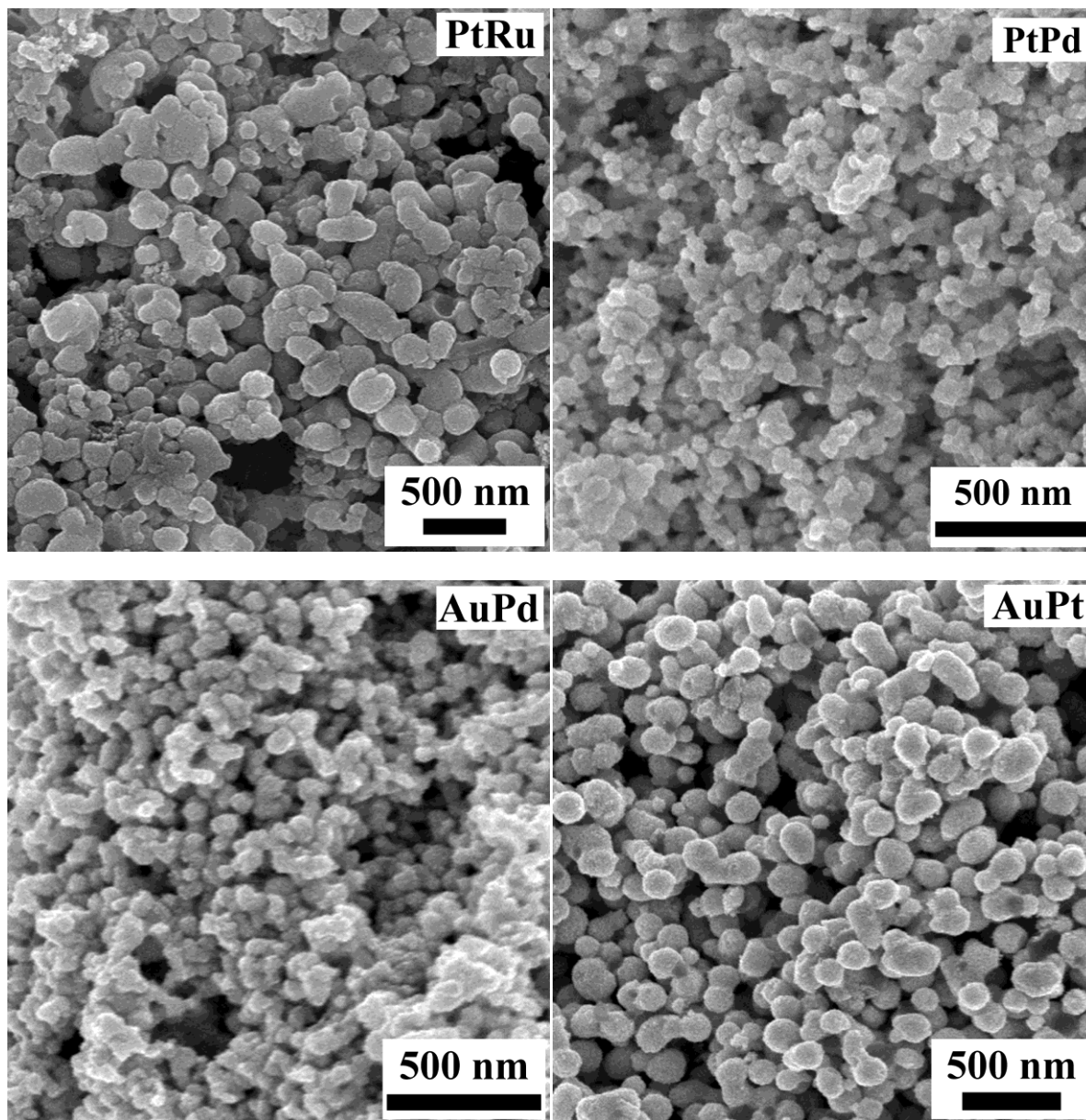


Figure S3. TEM bright field images of PtPd synthesized by a single step reduction(A) and PtPd synthesized in aqueous medium (B) and corresponding EDS (C and D respectively).

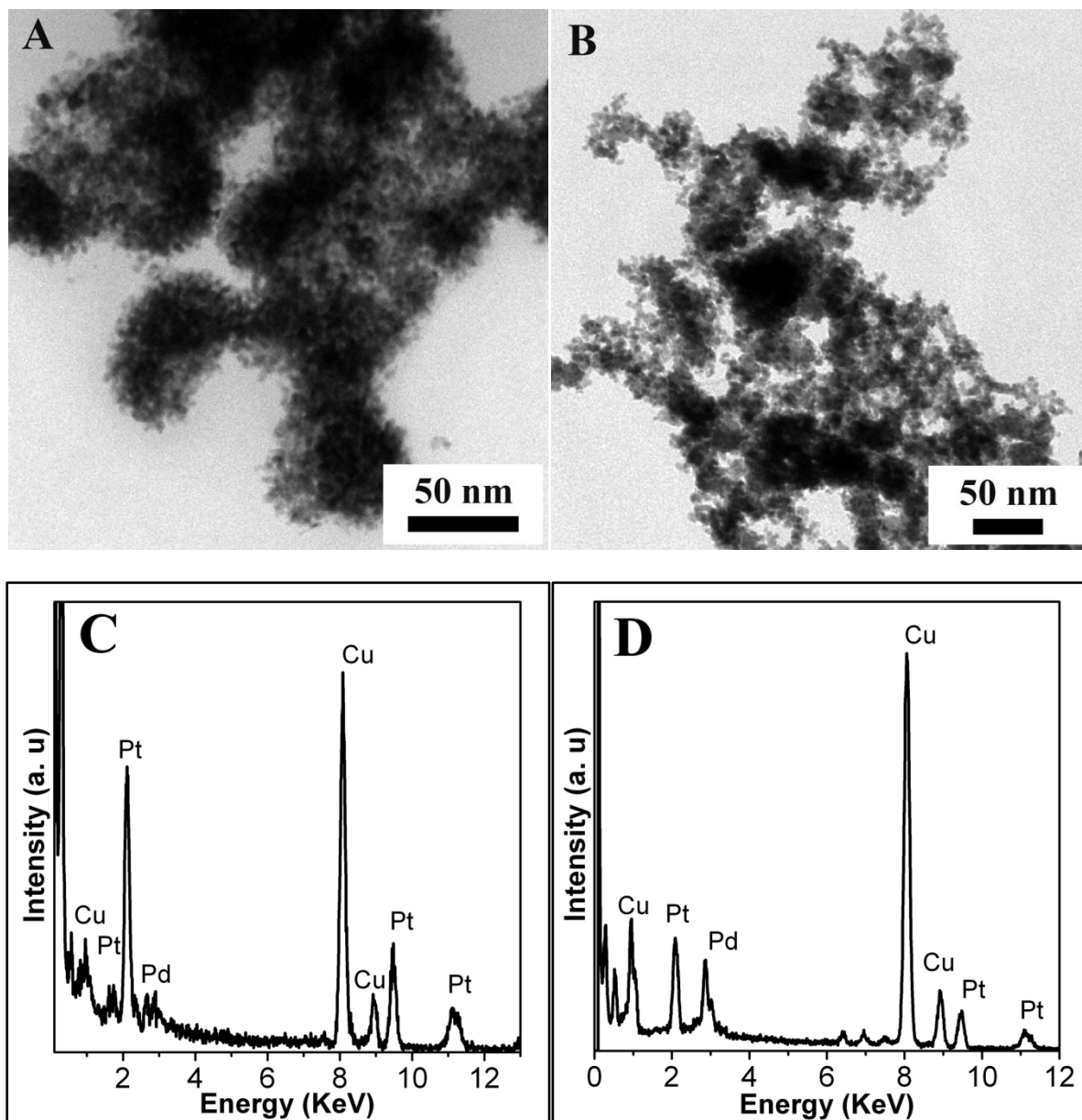


Figure S4. XPS core level spectra of AuPt showing the Au4f and Pt4f regions and AuPd showing the Au4f and Pd3d regions.

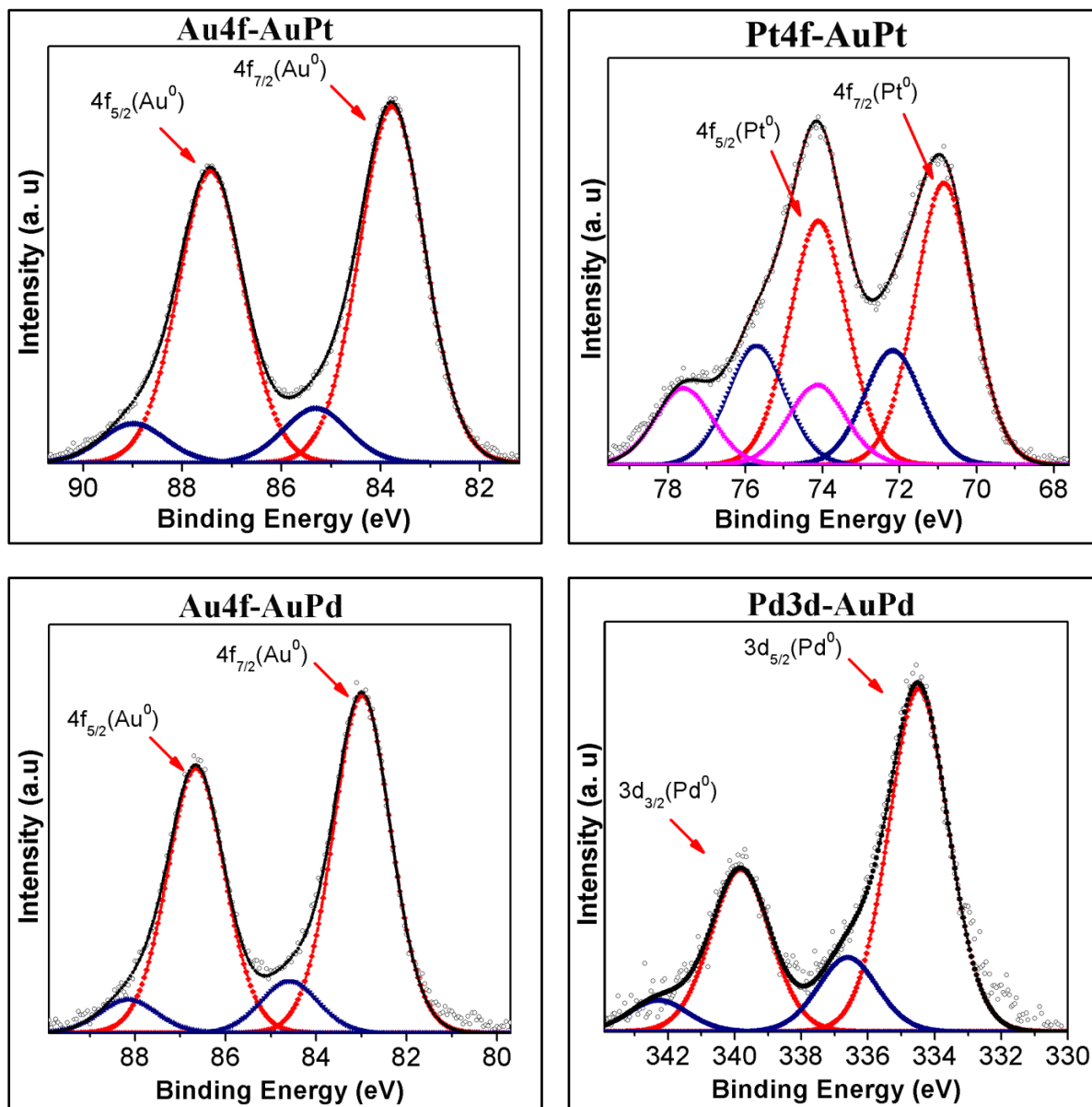


Figure S5. Cyclic voltammogram of PtRu catalyst (A) and PtPd catalyst (B) in 1M H₂SO₄ solution. ECSA is calculated using the integrated area under the curve corresponding to hydrogen desorption.

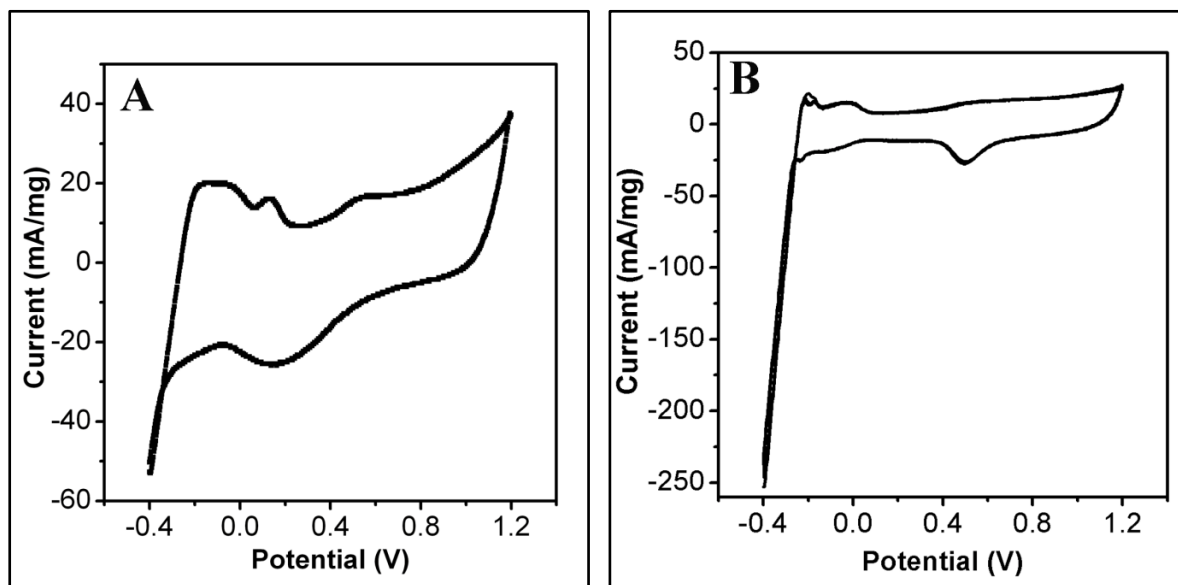


Figure S6. TEM images of a PtRu (A) and PtPd (C) and corresponding EDS (B and D respectively) after electrochemical study. The composition obtained is ~75:25(Pt:Ru) and 60:40(Pt:Pd).

