

## Electronic Supplementary Information (ESI)

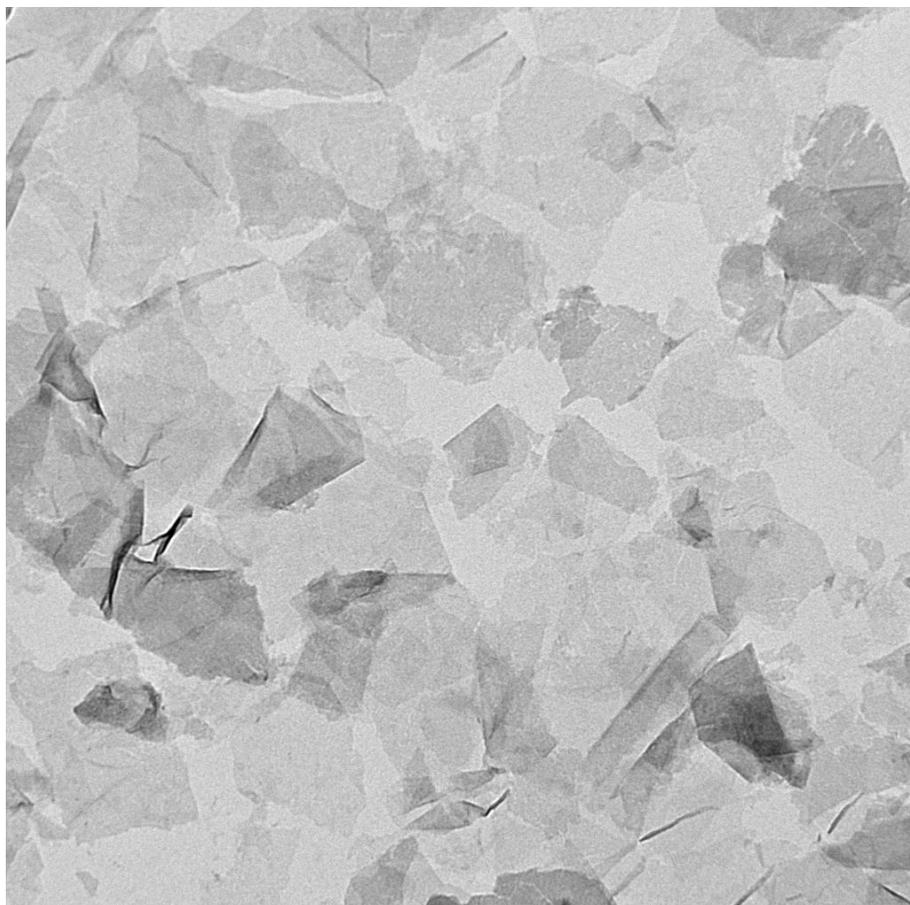


Figure S1 TEM image of MoS<sub>2</sub> nanosheets obtained by chemical exfoliation

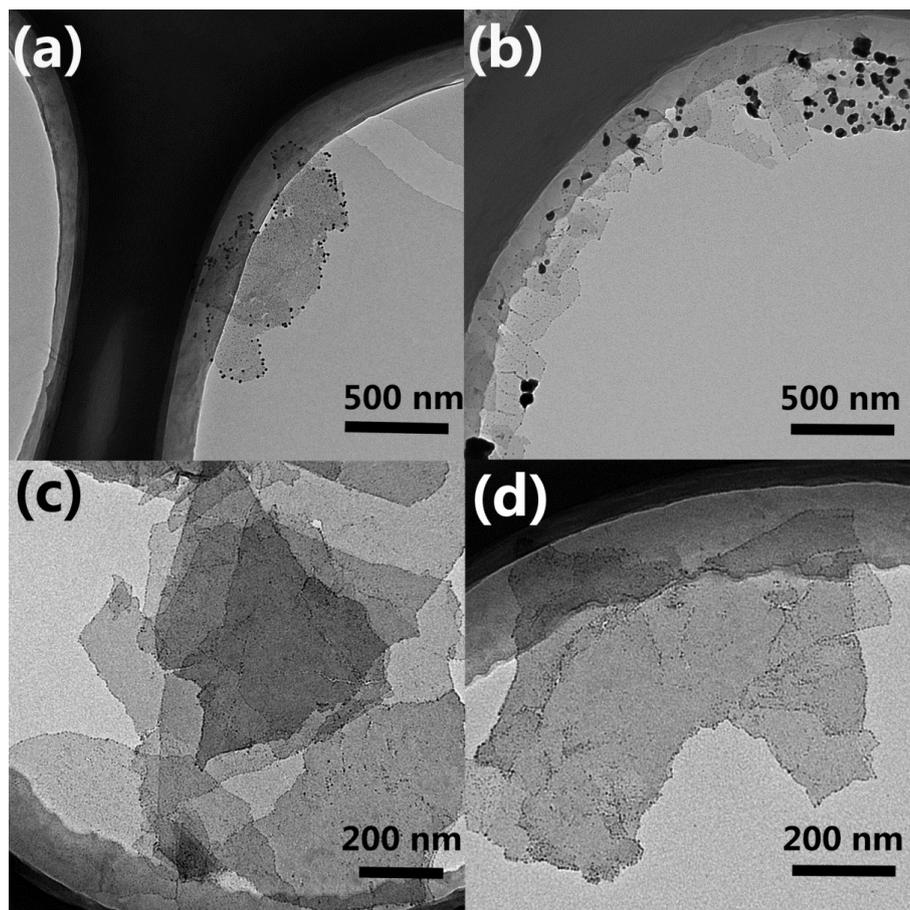


Figure S2 TEM images of (a) Au-MoS<sub>2</sub>, (b) Ag-MoS<sub>2</sub>, (c) Pd-MoS<sub>2</sub>, and (d) Pt-MoS<sub>2</sub> NSs prepared in aqueous solutions using Tween 80 as stabilizer.

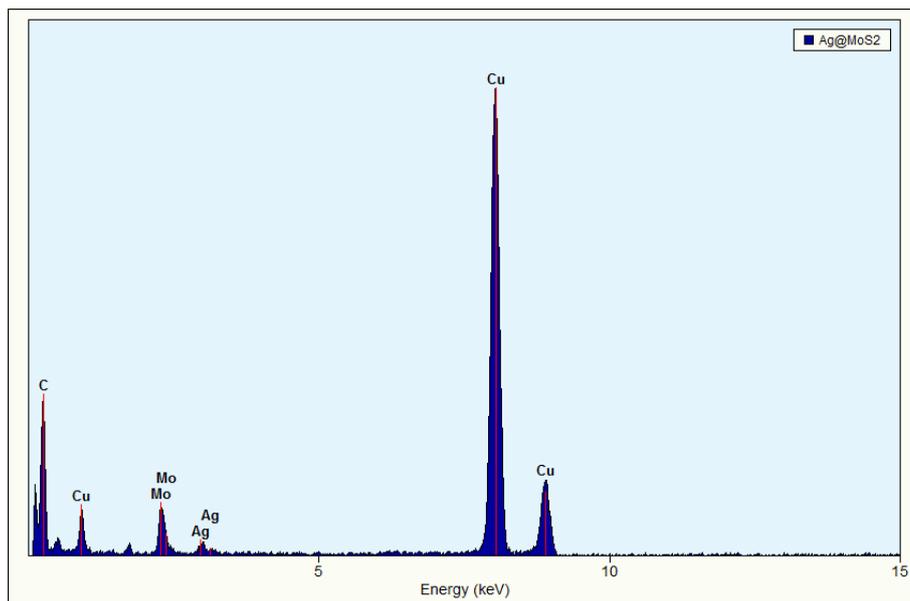


Figure S3 EDS analysis of Ag-MoS<sub>2</sub> NSs.

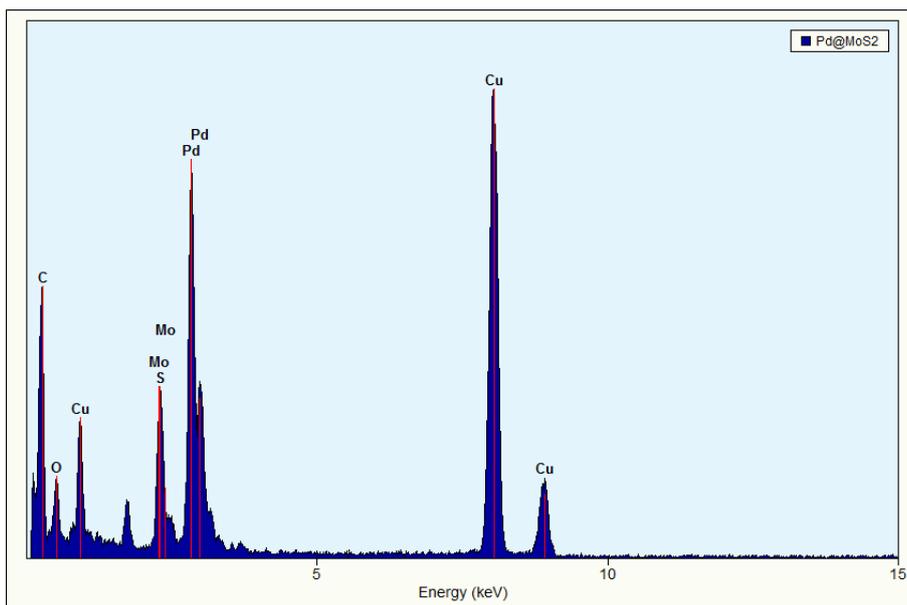


Figure S4 EDS analysis of Pd-MoS<sub>2</sub> NSs.

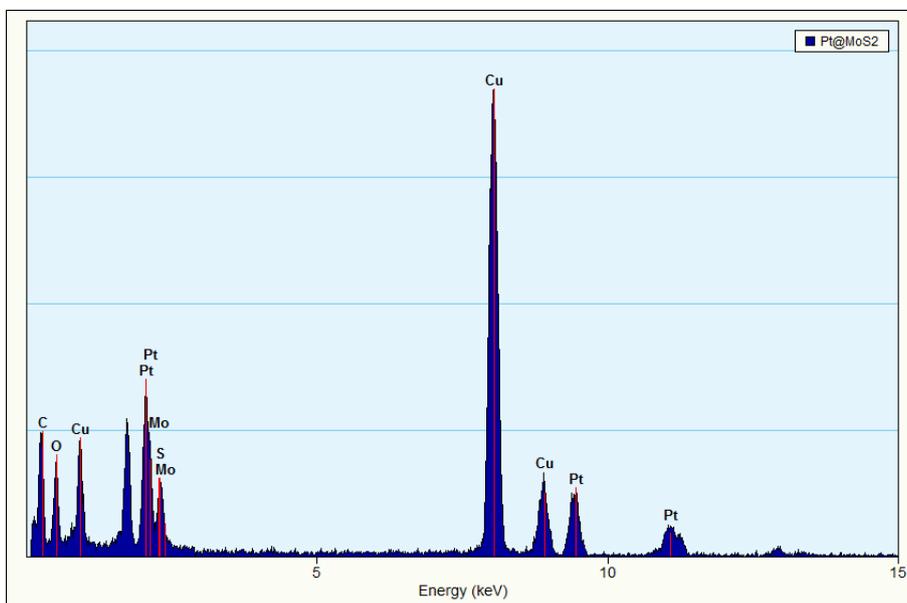


Figure S5 EDS analysis of Pt-MoS<sub>2</sub> NSs.

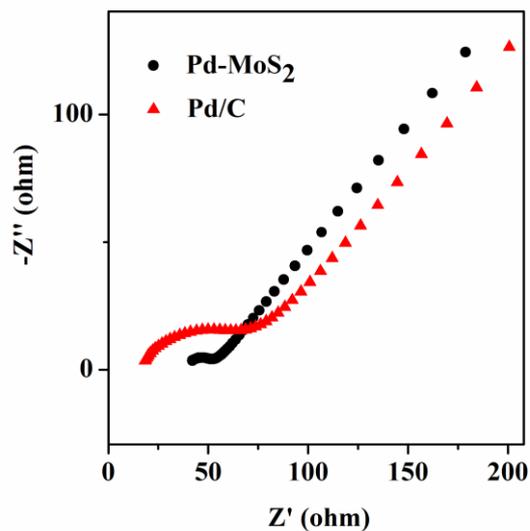
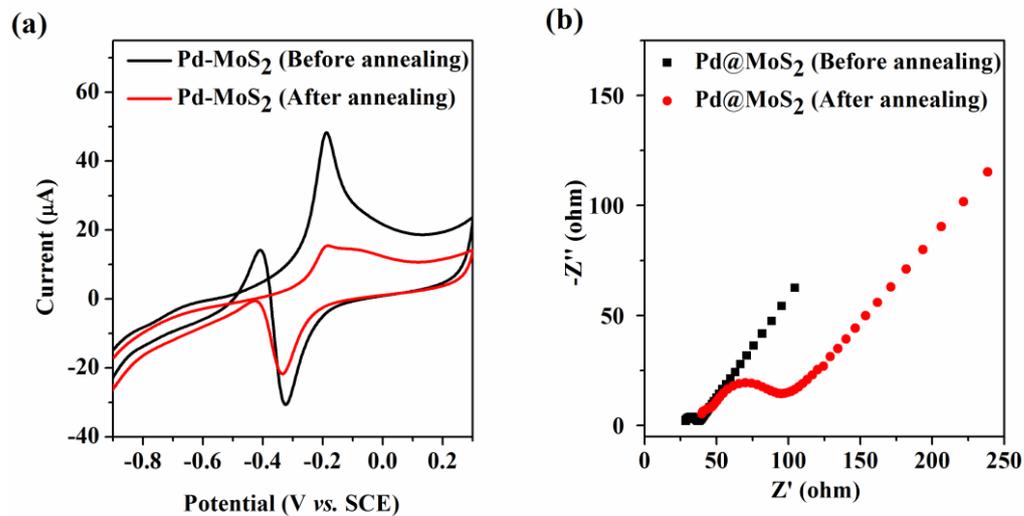


Figure S6 EIS measurement of Pd-MoS<sub>2</sub> NSs and Pd/C modified GCE.



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Figure S7 (a) Cyclic voltammograms of Pd-MoS<sub>2</sub> modified ITO electrodes in N<sub>2</sub>-saturated 0.5 M KOH + 1.0 M methanol solution before and after annealing; (b) EIS measurement of Pd-MoS<sub>2</sub> NSs modified ITO electrodes before and after annealing. Annealing conditions: Ar atmosphere, 300 °C, 1 h.

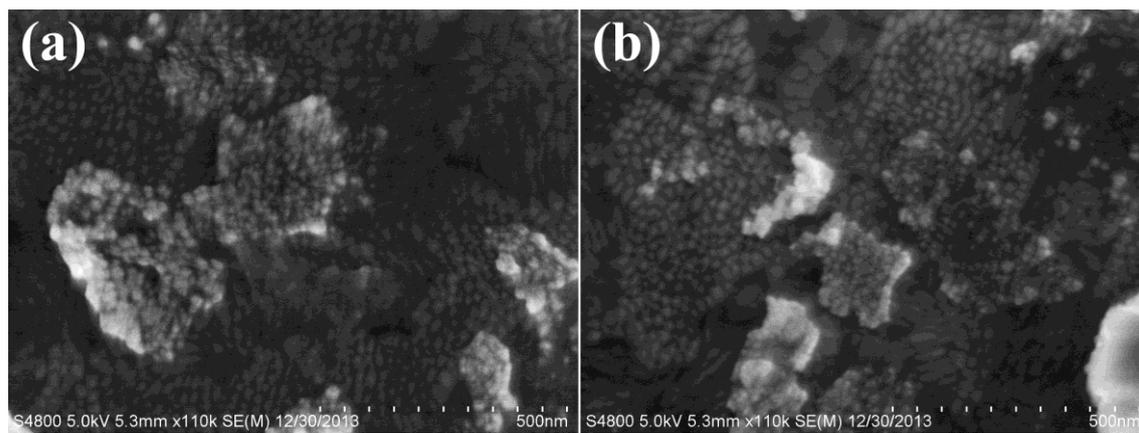


Figure S8 SEM images of Pd-MoS<sub>2</sub> NSs on ITO electrodes before (a) and after (b) CV test in 0.5 M KOH + 1.0 M methanol solution at scanning rate of 100 mV/s for 200 cycles.