

Supporting Information:

Title: Nanocomposite Multilayer Film of a Ruthenium Metallodendrimer and a Dawson-type Polyoxometalate as a Bifunctional Electrocatalyst

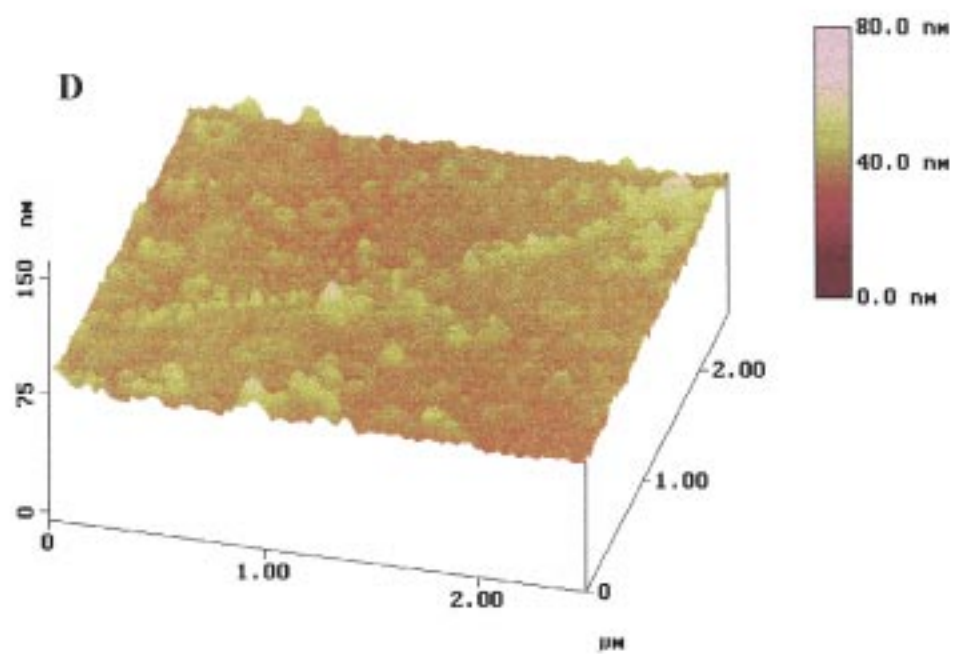
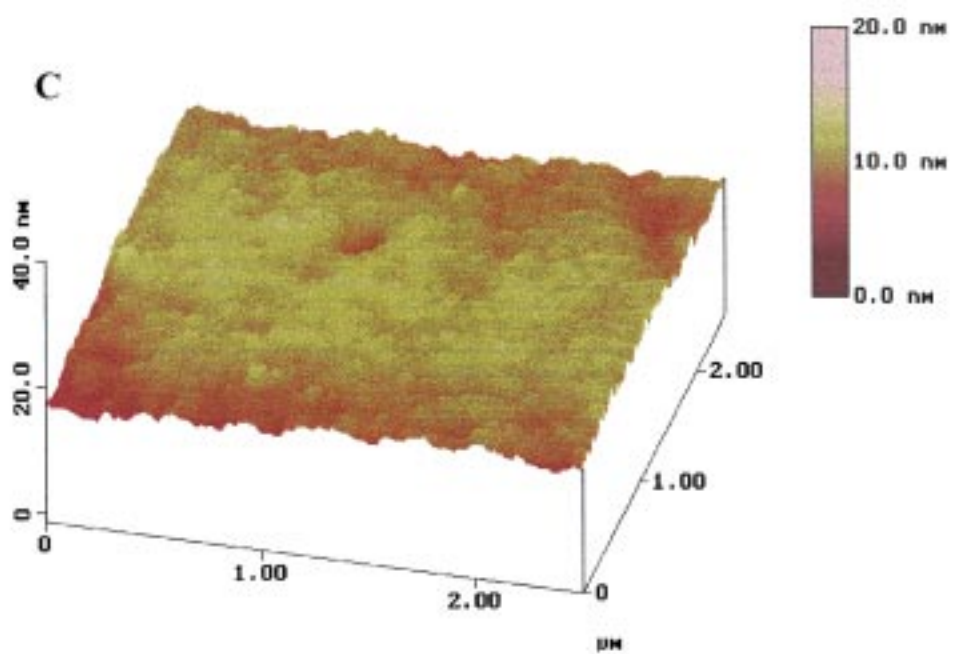
Authors: Long Cheng and James A. Cox*

Sup-Fig. 1 Cyclic voltammogram of GCE| $6P_2W_{18}$ | $6RuDen$ over the potential range of -0.66 to 1.2 V in 1.0 M H_2SO_4 at 0.1 $V s^{-1}$.

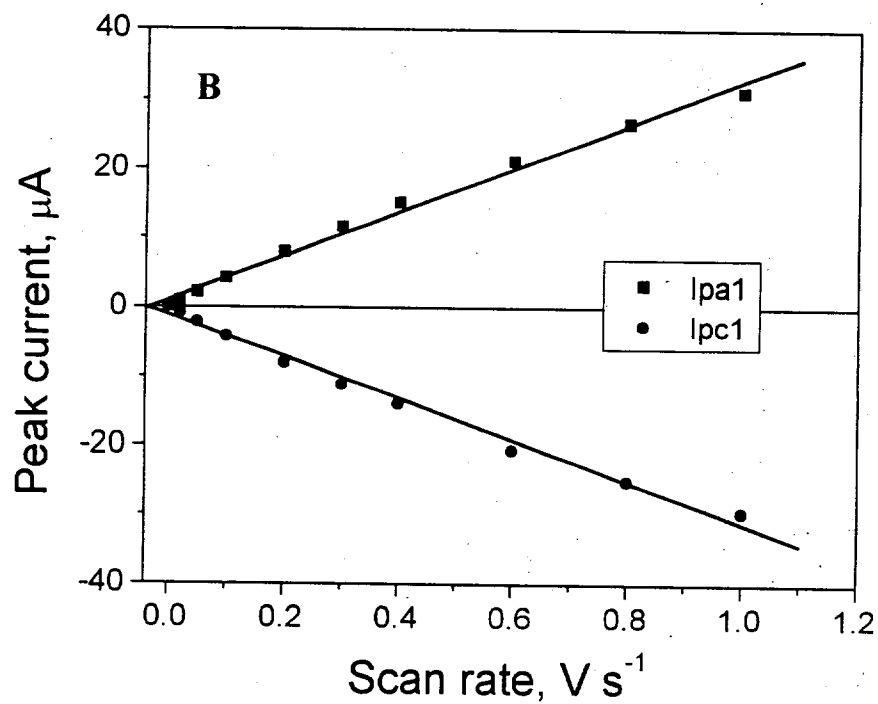
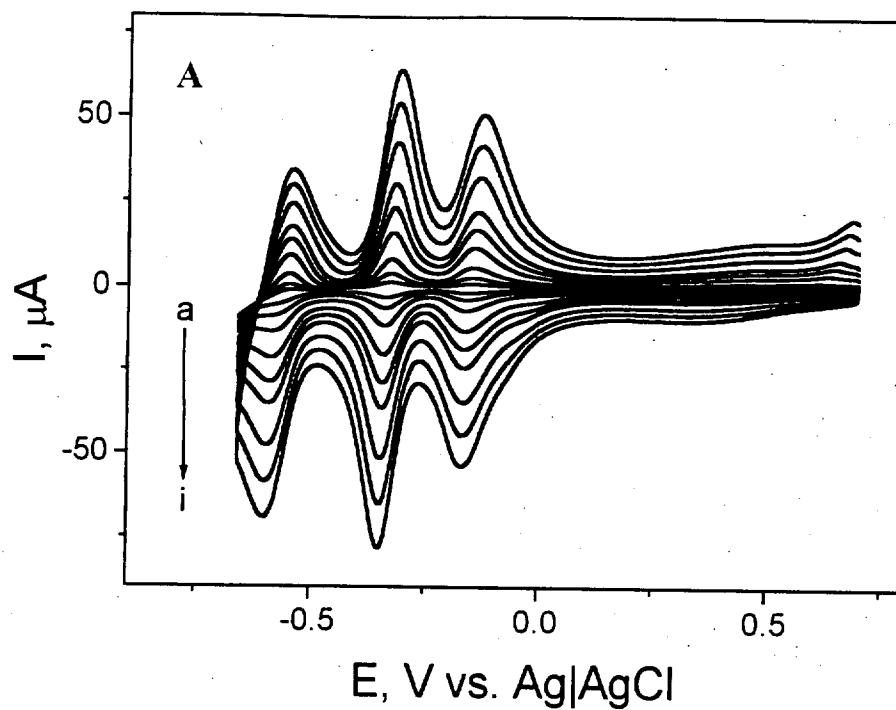
Sup-Fig. 2 (A) Cyclic voltammograms of GCE| $6P_2W_{18}$ | $5RuDen$ in 1.0 M H_2SO_4 at various scan rates of 0.02, 0.05, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8 and 1.0 $V s^{-1}$ (from curves a to i). (B) The linear dependence of anodic and cathodic peak currents of the first W-based redox wave on scan rates.

Sup-Fig. 3 (A) Cyclic voltammograms of GCE| $6P_2W_{18}$ | $6RuDen$ in 1.0 M H_2SO_4 at various scan rates of 0.02, 0.05, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8 and 1.0 $V s^{-1}$ (from curves a to i). (B) The linear dependence of anodic and cathodic peak currents of the Ru-based redox wave on scan rates.

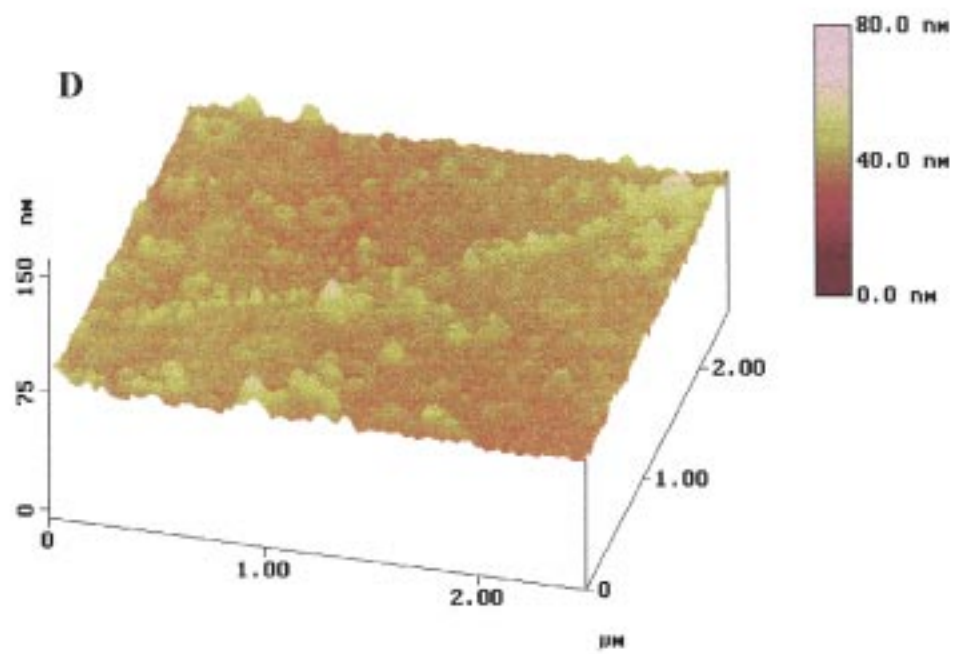
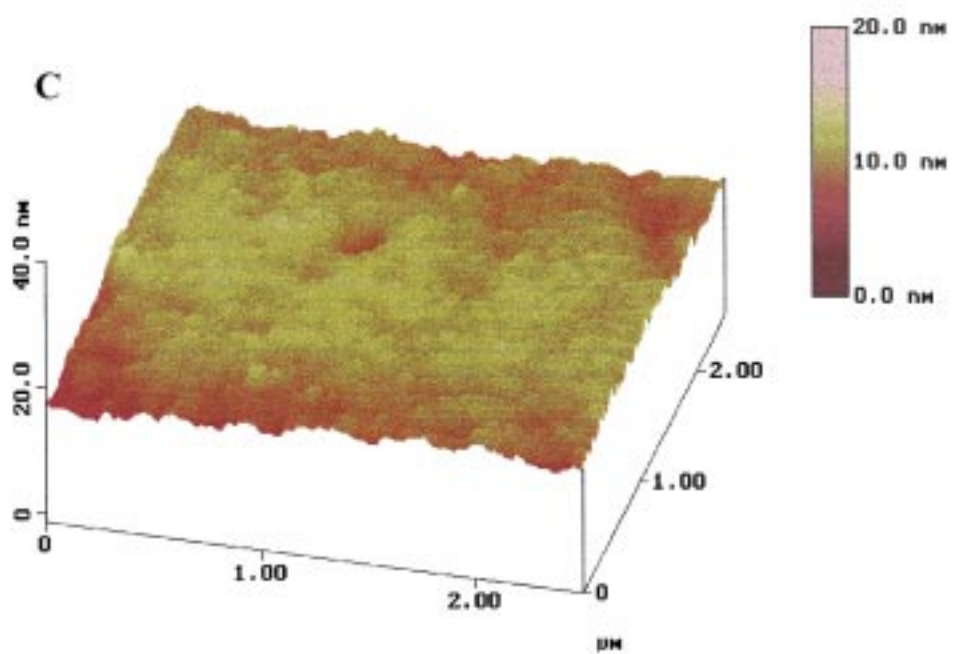
Sup-Fig. 4 TappingModeTM AFM images in three-dimensional height profiles of (A) a bare quartz substrate, (B) quartz|PDDA, (C) quartz|PDDA| P_2W_{18} , and (D) quartz|PDDA| $10P_2W_{18}$ | $10RuDen$.



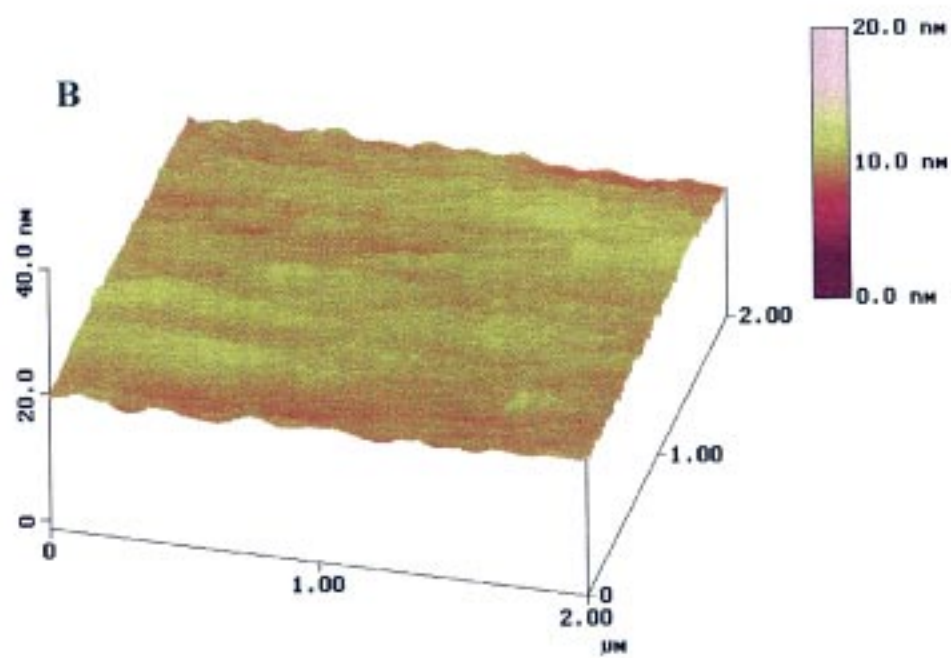
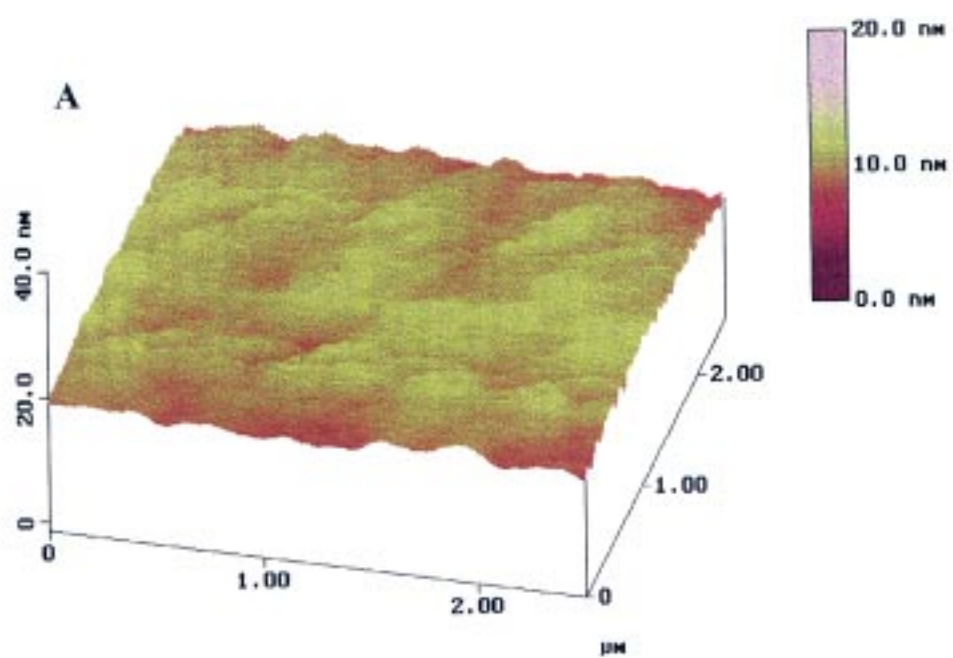
Sup-Fig. 4



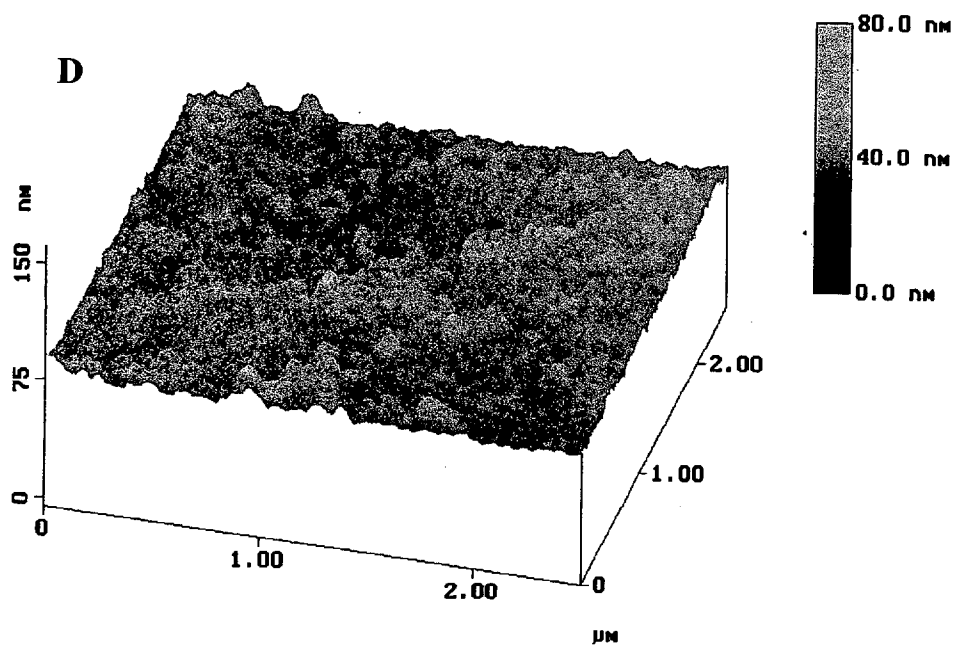
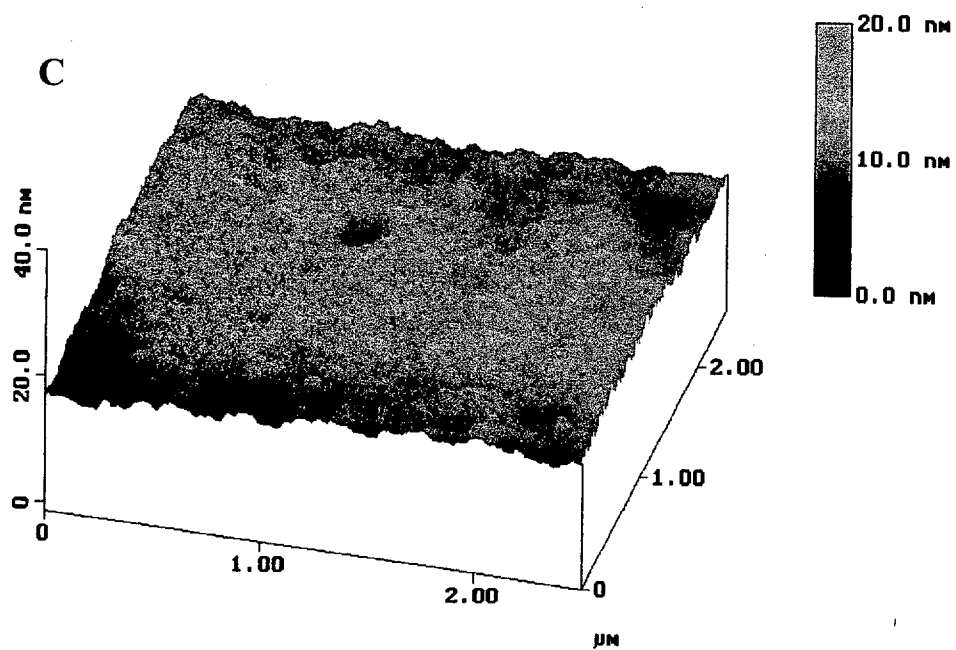
Sup-Fig. 2



Sup-Fig. 4



Sup-Fig. 4



Sup-Fig. 4