Supplementary Material (ESI) for Chemical Communications

Experimental Details

Au(111) single-crystal electrodes were prepared by the Clavilier method. After the electrode was annealed in a hydrogen flame and then cooled down in air for at least 3 min, adlayers of CoCTPP and CoTCPP were formed by successively immersing the electrode into a solution of either CoCTPP (*ca*. 10 μM in benzene) for 30 s or CoTCPP (10 μM in methanol) for 60 s. The modified Au(111) surface thus produced was then rinsed with ultrapure water, and transferred into an electrochemical STM cell, which was then filled with ultrapure 0.1 M $HClO_4$. Electrochemical STM measurements were performed using a Nanoscope E with a tungsten tip etched in 1 M KOH. The tips were coated with nail polish to minimize residual Faradaic currents. The STM images were recorded in constant current mode with a high-resolution scanner (HD-0.5I). The reversible hydrogen electrode (RHE) was used as the reference electrode in all experiments.