



Supplementary Materials

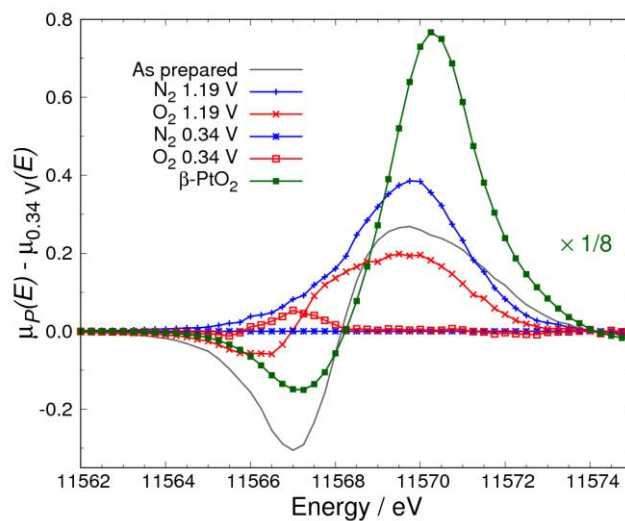


Figure S1. $\Delta\mu$ XANES spectra for the catalyst calculated by $\mu_p(E) - \mu_{0.34V}(E)$ where $\mu_{0.34V}(E)$ is a spectrum in 1 M KOH saturated with N_2 .

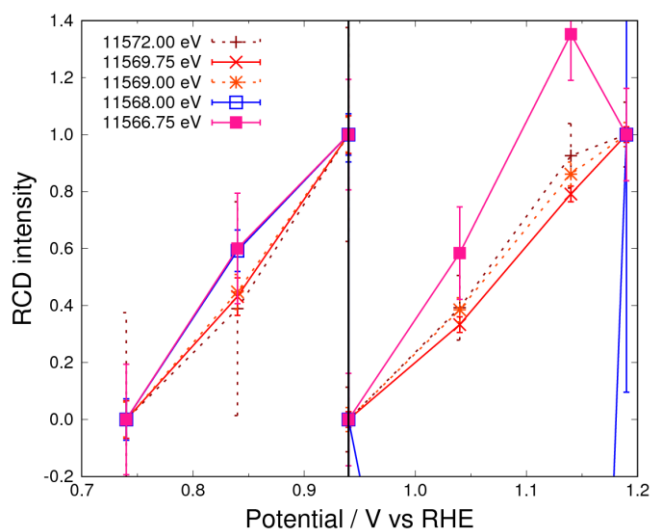


Figure S2. RCD curves for the controlled potential above 0.74 V in 1 M KOH saturated with N_2 . The standard potentials are 0.74, 0.94 and 1.19 V. Circle and square curves represent the negative and two positive peaks of 11566.75 eV, 11567.5 eV and 11569.75 eV, respectively. The dashed lines are complement of the explanation for RCD.

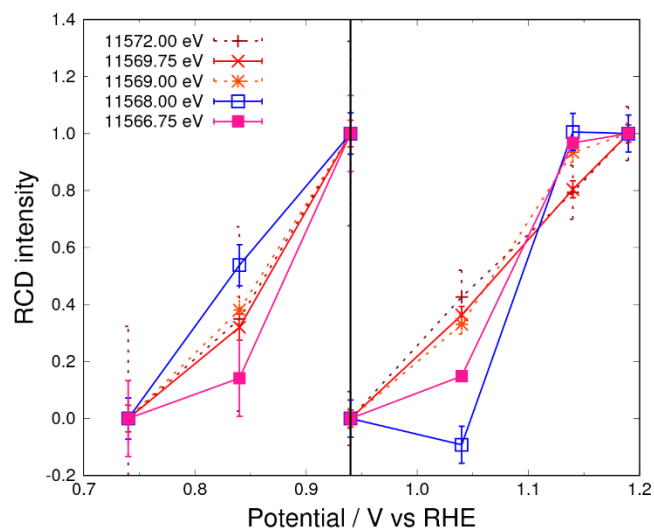


Figure S3. RCD curves for the controlled potential above 0.74 V in 1 M KOH saturated with O₂. The standard potentials are 0.74, 0.94 and 1.19 V. Circle and square curves represent the negative and two positive peaks of 11566.75 eV, 11567.5 eV and 11569.75 eV, respectively. The dashed lines are complement of the explanation for RCD.