Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

SUPPORTING INFORMATION

Impacts of Anions on Oxygen Reduction Reaction Kinetics on Platinum and Palladium Surfaces in Alkaline Solutions

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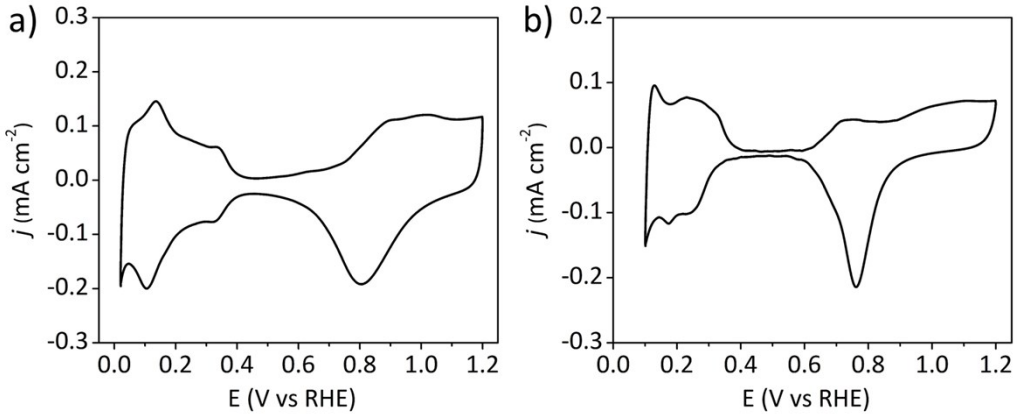

Figure S1. Cyclic voltammograms for the deposited a) Pt and b) Pd thin film electrodes in an Ar-saturated 0.1 M $HClO_4$ solution at a scan rate of 10 mV s^{-1}.

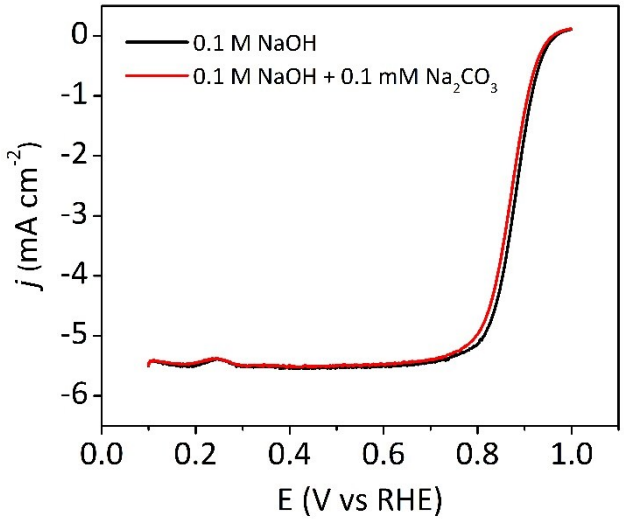

Figure S2. Comparisons of cyclic voltammograms for Pt/C supported on a glassy carbon electrode in O_2-saturated 0.1 M NaOH solutions a) with and b) without 0.1 mM Na_2CO_3 at a scan rate of 10 mV s^{-1}, rotation speed = 1600 rpm.

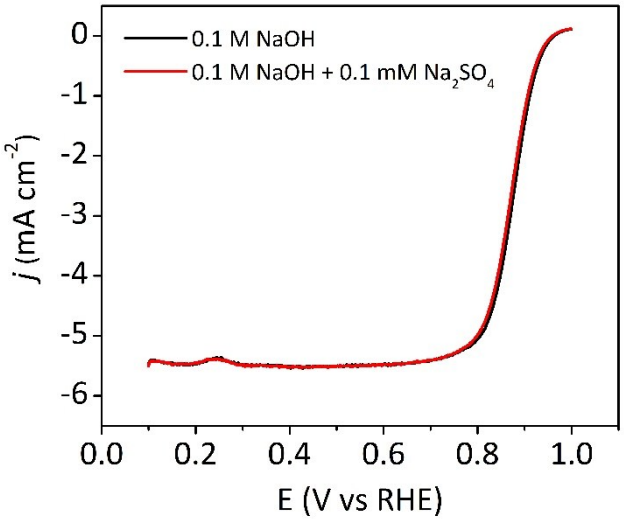

Figure S3. Comparisons of cyclic voltammograms for Pt/C supported on a glassy carbon electrode in O_2-saturated 0.1 M NaOH solutions a) with and b) without 0.1 mM Na_2SO_4 at a scan rate of 10 mV s^{-1}, rotation speed = 1600 rpm.

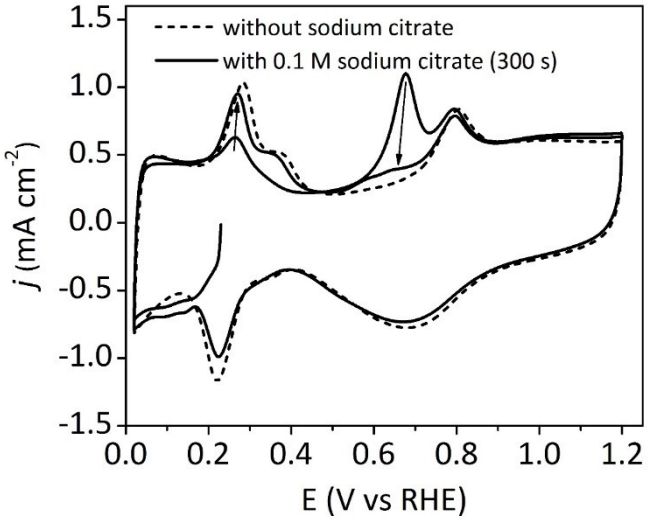

Figure S4. Comparisons of initial cyclic voltammograms for Pt/C supported on a glassy carbon electrode in Ar-saturated 0.1 M NaOH (black dashed line) and 0.1 M NaOH + 0.1 M sodium citrate solution with initial potential kept at 0.23 V for 300 s (black line), scan rate = 50 mV s^{-1}.

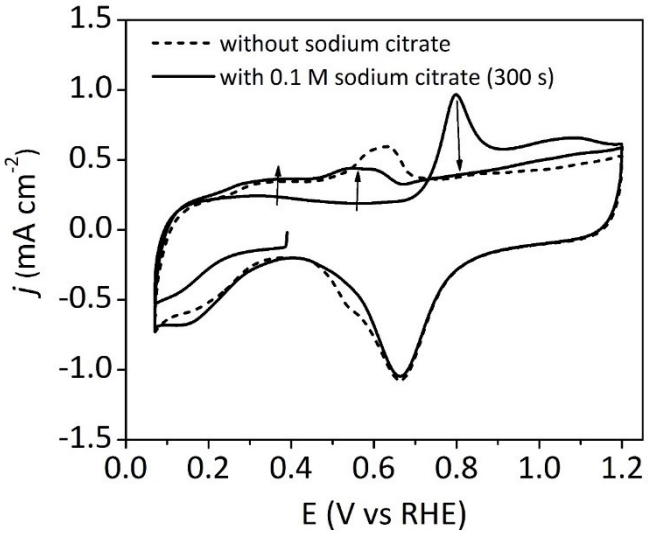

Figure S5. Comparisons of initial cyclic voltammograms for Pd/C supported on a glassy carbon electrode in Ar-saturated 0.1 M NaOH (black dashed line) and 0.1 M NaOH + 0.1 M sodium citrate solution with initial potential kept at 0.39 V for 300 s (black line), scan rate = 50 mV s^{-1}.

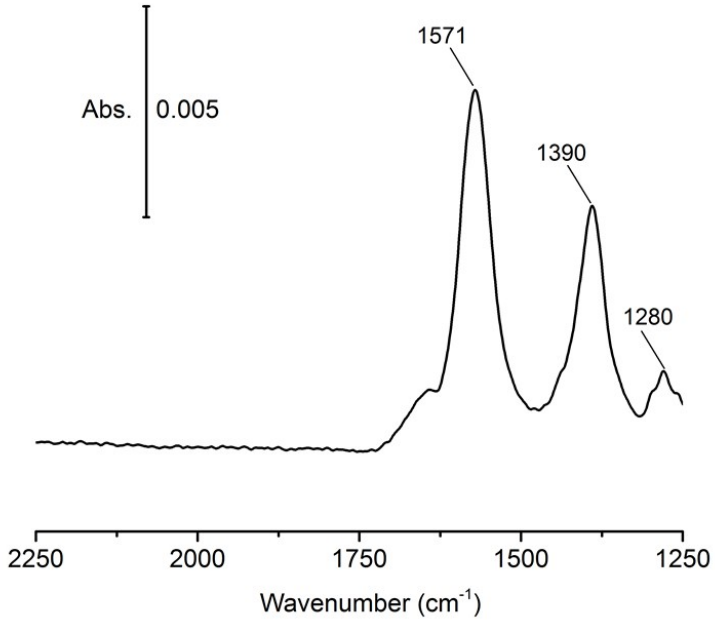

Figure S6. ATR-IR spectra of an Ar-saturated 0.1 M NaOH + 0.1 M sodium citrate solution obtained on a ZnSe hemispherical prism, employing the single-beam spectrum of an Ar-saturated 0.1 M NaOH solution as the reference spectrum.

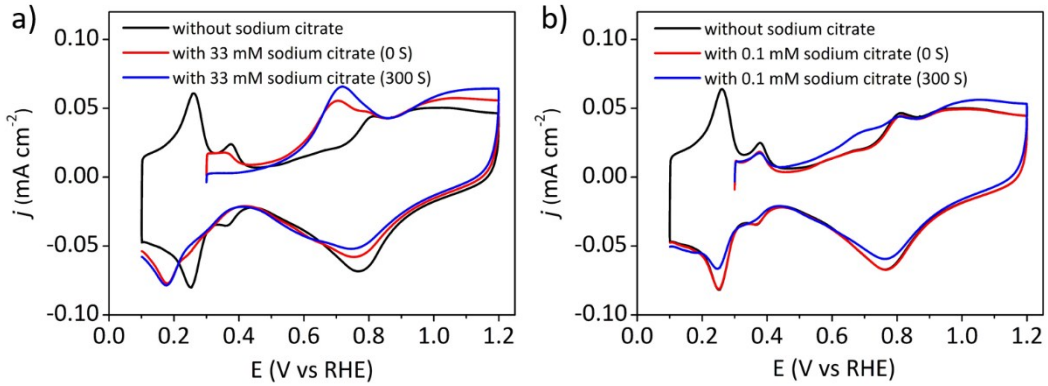

Figure S7. Comparisons of cyclic voltammograms for a Pt disk electrode in a) Ar-saturated 0.1 M NaOH (black line) and 0.1 M NaOH + 33 mM sodium citrate solutions with initial potential kept at 0.3 V for 0 s (red line) and 300 s (blue line), b) an Ar-saturated 0.1 M NaOH (black line) and 0.1 M NaOH + 0.1 mM sodium citrate solution with initial potential kept at 0.3 V for 0 s (red line) and 300 s (blue line), scan rate = 50 mV s^{-1}.