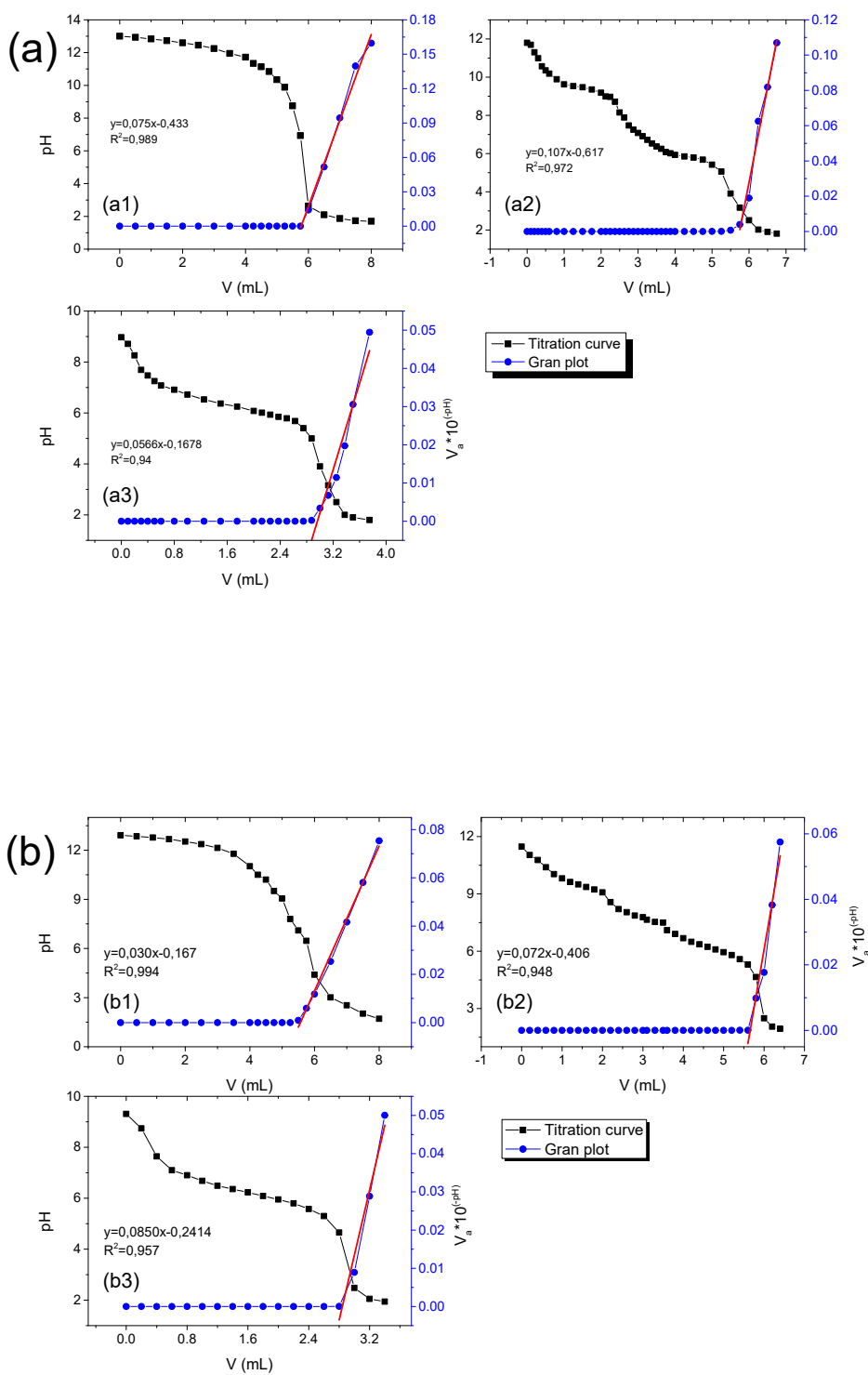


Electronic Supplementary Information



Electronic Supplementary Information

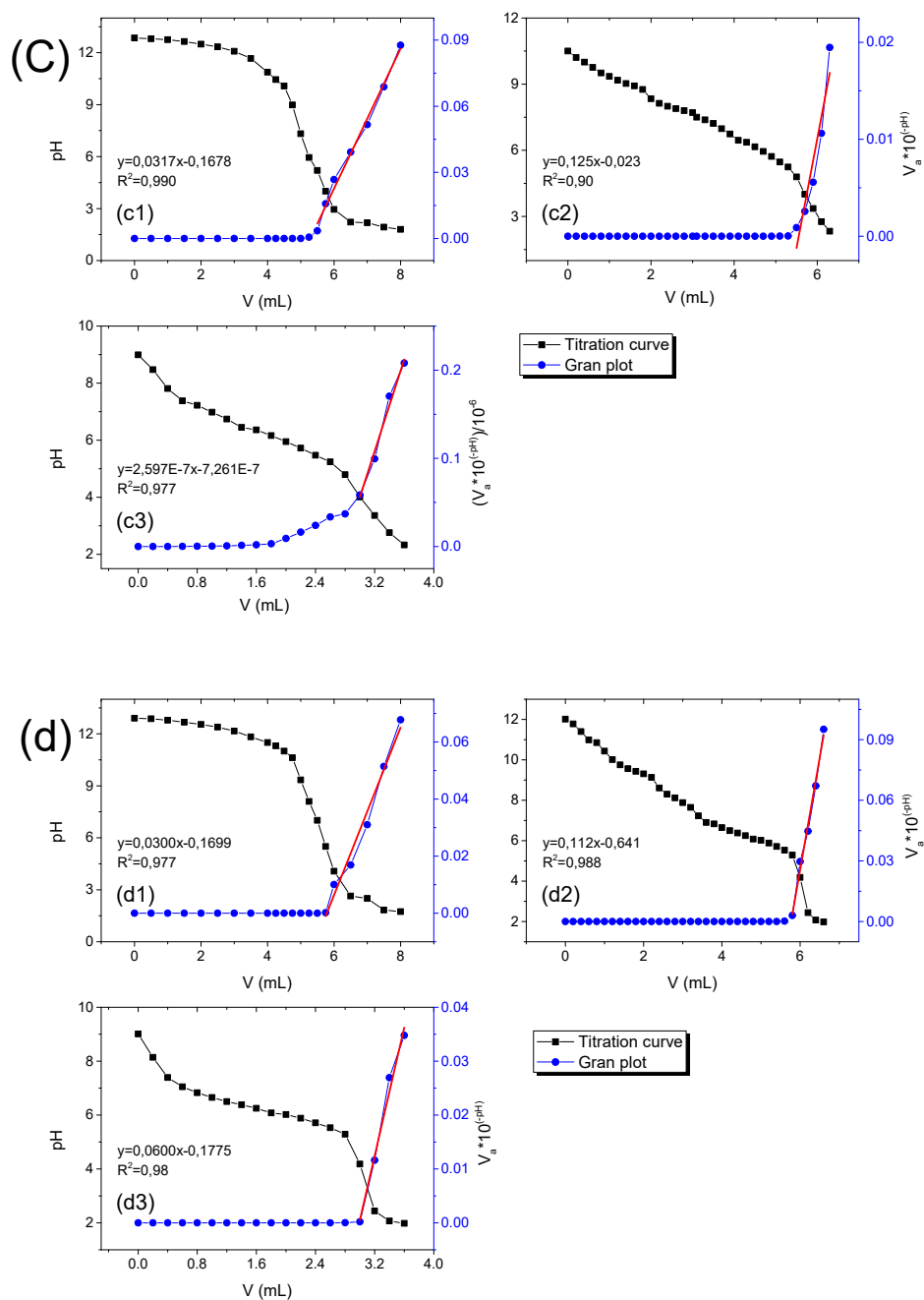


Figure S1: Boehm titration curves and Gran plot for: (a) blank; (a1) 0.1 mol L⁻¹ NaOH system, (a2) 0.05 mol L⁻¹ Na₂CO₃ system, (a3) 0.05 mol L⁻¹ KHCO₃ system; (b) graphite powder; (b1) 0.1 mol L⁻¹ NaOH system, (b2) 0.05 mol L⁻¹ Na₂CO₃ system, (b3) 0.05 mol L⁻¹ KHCO₃ system; (c) carbon black, (c1) 0.1 mol L⁻¹ NaOH system, (c2) 0.05 mol L⁻¹ Na₂CO₃ system, (c3) 0.05 mol L⁻¹ KHCO₃ system; (d) carbon nanotubes (d1) system with NaOH 0.1 mol L⁻¹, (d2) system with Na₂CO₃ 0.05 mol L⁻¹, (d3) system with KHCO₃ 0.05 mol L⁻¹.

Electronic Supplementary Information

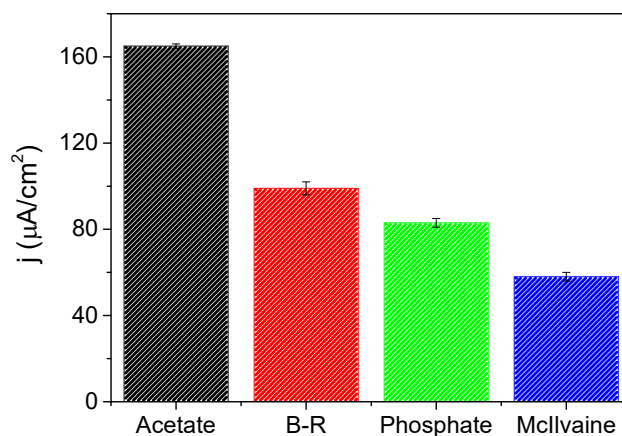


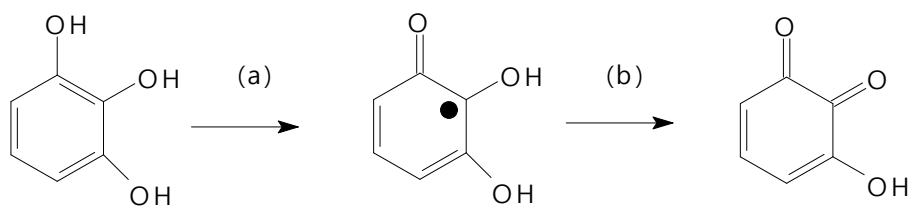
Figure S2: Current density of second peak for the following buffer solutions: acetate, B-R, phosphate and Mcllvaine (at 0.1 mol L^{-1} , pH 5.0). Experiments were carried out at a scan rate of 50 mV s^{-1} . $[\text{DHP}] = 2 \text{ mmol L}^{-1}$.

Table S1: Evaluation of reproducibility of CB paste electrode response.

| Day | 1 | 2 | 3 | 4 | Average value | RSD |
|-----------------------------------|--------|--------|--------|--------|---------------|-------|
| j ($\mu\text{A}/\text{cm}^2$) | 164.92 | 164.82 | 166.10 | 168.53 | 165.34 | 1.68% |

Table S2: Evaluation of precision of CB paste electrode response.

| Measurement | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------------|--------|--------|--------|--------|---------------|--------|
| j ($\mu\text{A}/\text{cm}^2$) | 168.51 | 165.50 | 165.68 | 165.16 | 164.15 | 164.34 |
| Measurement | 7 | 8 | 9 | 10 | Average value | RSD |
| j ($\mu\text{A}/\text{cm}^2$) | 163.84 | 163.71 | 165.20 | 163.18 | 164.93 | 0.92% |



Scheme S1: Suggested mechanism of DHP electrooxidation.