Supporting information for

Origin of the Adsorption-Controlled Redox Behavior of Quinone-Based Molecules: Importance of the Micropore Width†

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**Electrochemical measurement of Nafion-coated *n*-nonane/AC and AC.**

Electrochemical measurements were conducted with a potentiostat/galvanostat (HZ-7000, Hokuto Denko) using a three-electrode set up. A mirror-polished glassy carbon rod (diameter = 6 mm) was used as the working electrode, Pt mesh as the counter electrode, and a reversible hydrogen electrode (RHE) as the reference electrode. *n*-nonane/AC or AC suspensions were prepared by dispersing 20 mg of electrode material in 10 mL of ultrapure water. The suspension was magnetically stirred and sonicated to ensure a homogeneous dispersion. The working electrode was prepared by drop-casting 20 μL of an aqueous suspension of the suspension onto a glassy carbon electrode. A thin-layer binder was fabricated by drop-casting 20 μL of a 1 wt.% Nafion solution. A 5 wt. % Nafion solution (Sigma-Aldrich, 5 wt. % in lower aliphatic alcohols and water, contains 15-20% water) was diluted by methanol to prepare a 1 wt. % Nafion solution (~80 wt.% methanol). As a control sample, an AC electrode was prepared in a similar method. The component in the solution was summarized in Table S1. As a control sample, an AC electrode was prepared in a similar method. Before the electrochemical measurements, break-in potential cycling between 0 and 1200 mV vs. RHE was conducted using de-aerated 0.5 M H2SO4 (298 K) at a scan rate of 200 mV s−1 for 100 cycles. The redox behavior of the flowable electrode was investigated by potential cycling at scan rates of 500–2 mV s−1. The stability of *n*-nonane/A and AC was investigated by potential cycling between 0 and 1200 mV vs. RHE in de-aerated 0.5 M H2SO4 (298 K) at a scan rate of 50 mV s−1 for 500 cycles.

グラフ, 折れ線グラフ

自動的に生成された説明

**Figure S1.** Cyclic voltammograms of (a) AC and (b) *n*-nonane/AC in 0.5 M H2SO4 (298 K) at a scan rate of 50 mV s−1 before (solid line) and after 500 potential cycles (dashed line).

**Table S1.** Components in solution weight %.

|  |  |
| --- | --- |
|  | Content (wt. %) |
| Nafion | 1 |
| H2O | 2-4 |
| 2-PrOH | 16-17 |
| MeOH | 80 |