

Supporting Information

Anthraquinone thin-film electrodes for reversible CO₂ capture and release

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FTIR CO₂ calibration

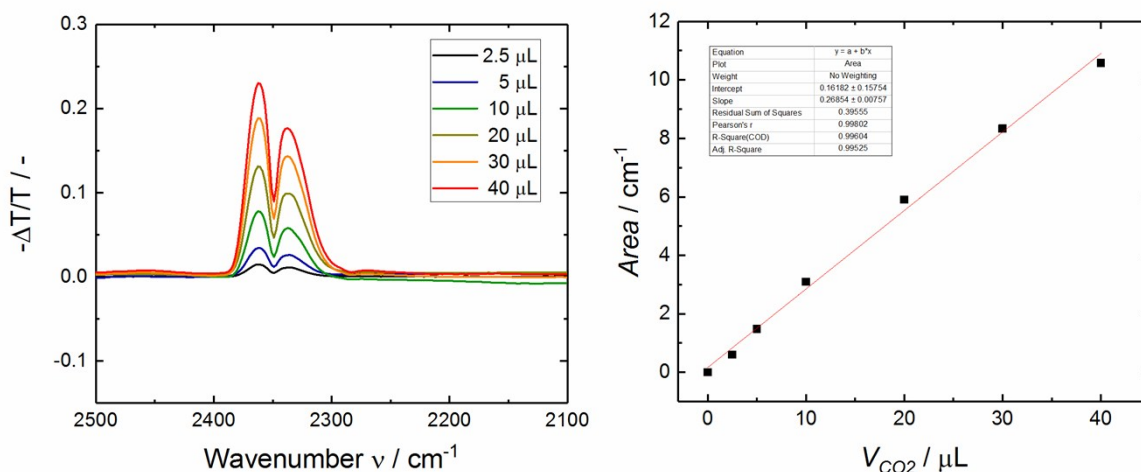


Figure S1: IR spectra of different amounts of CO₂ injected (left image) and the integrated areas versus the corresponding amounts (right image).

The capture release experiment was repeated three times resulting between 1.9 and 2.2 μL of CO₂ released. Taking the actual electrode areas into account an uptake capacity of $5.9 \pm 0.2 \text{ mmol}_{\text{CO}_2} / \text{g}_{\text{AQ}}$ corresponding to an efficiency (experimental amount of CO₂ / theoretical amount of CO₂) of 61%.

For those values the detected, released quantity of CO₂ is assumed to be equal to the captured amount.

ATR-FTIR spectroelectrochemistry

The mentioned *in-situ* spectroelectrochemical investigations were performed under N_2 and CO_2 conditions. In the main text, only the focus on the region below 1800 wavenumbers was shown. For reasons of completeness, here in Figure S2 the full IR spectra at various potentials are shown under N_2 and CO_2 conditions:

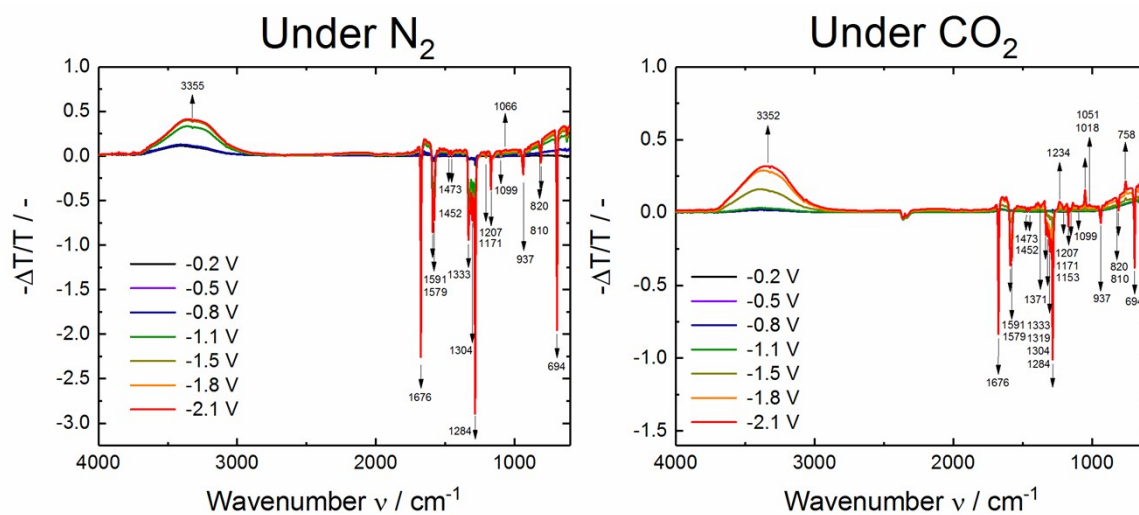


Figure S2: *In-situ* spectroelectrochemistry spectra of AQ/Ge at given potentials. Nitrogen saturated electrolyte solution (left picture) and CO_2 saturated electrolyte solution (right image).