

Supporting Information

for

Kelvin probe force microscopy in liquid using electrochemical force microscopy

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Additional Figures

Double exponent fitting of the transient EcFM mixed response in isopropanol

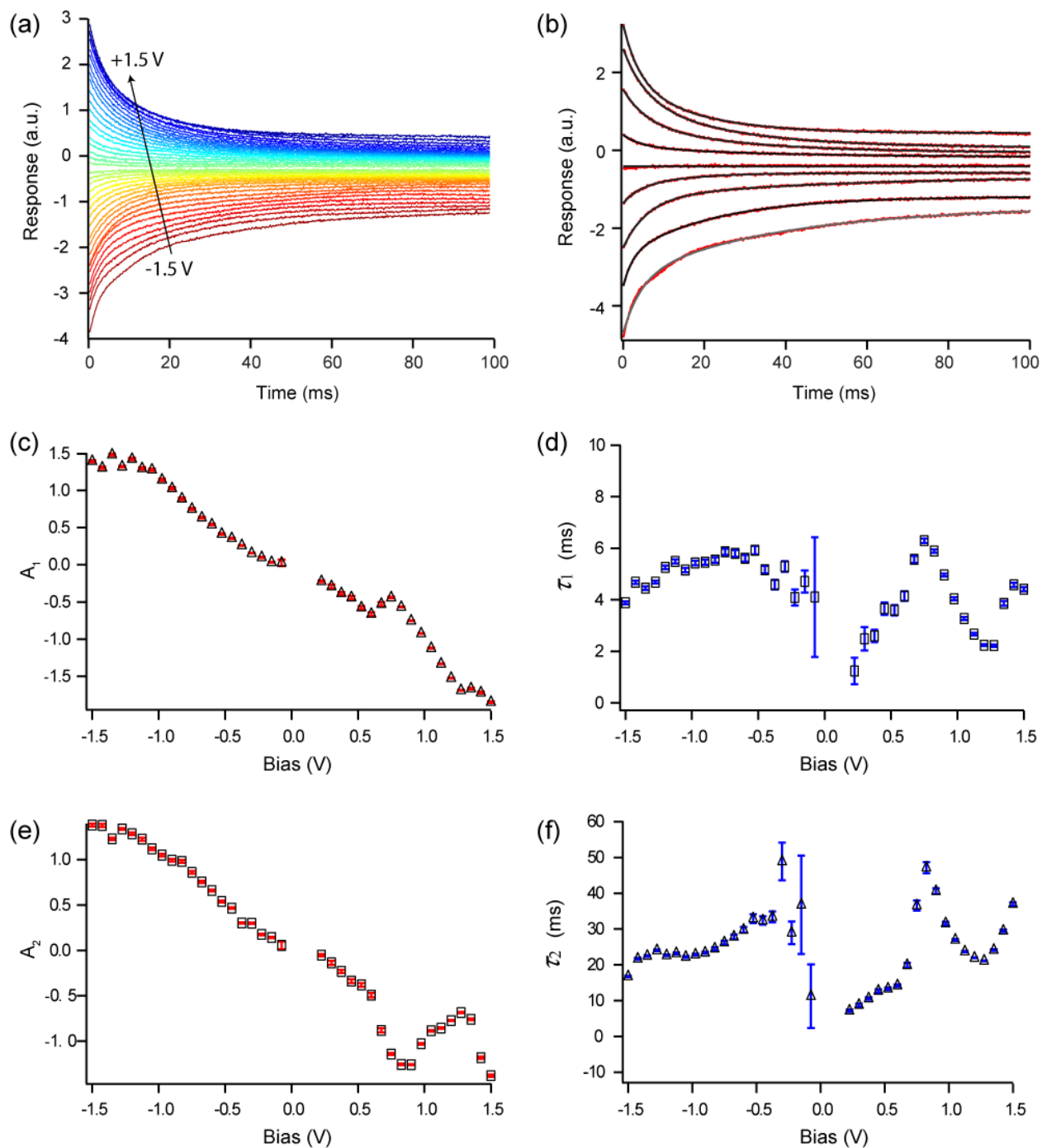


Figure S1: (a) Transient time profiles of EcFM A_{ω}^{mixed} response [bias-on] collected in isopropanol. (b) A selection of double exponential fits (red) to the experimental data (grey) between -1.5 V and $+1.5$ V. Bias dependence of the fitting coefficients (\pm std. dev.) showing (c) A_1 (d) τ_1 (e) A_2 (f) τ_2 , where the fitting equation was defined as $f(x) = y_0 + A_1 e^{-t/\tau_1} + A_2 e^{-t/\tau_2}$.

Double exponent fitting of the transient EcFM mixed response in milliQ water

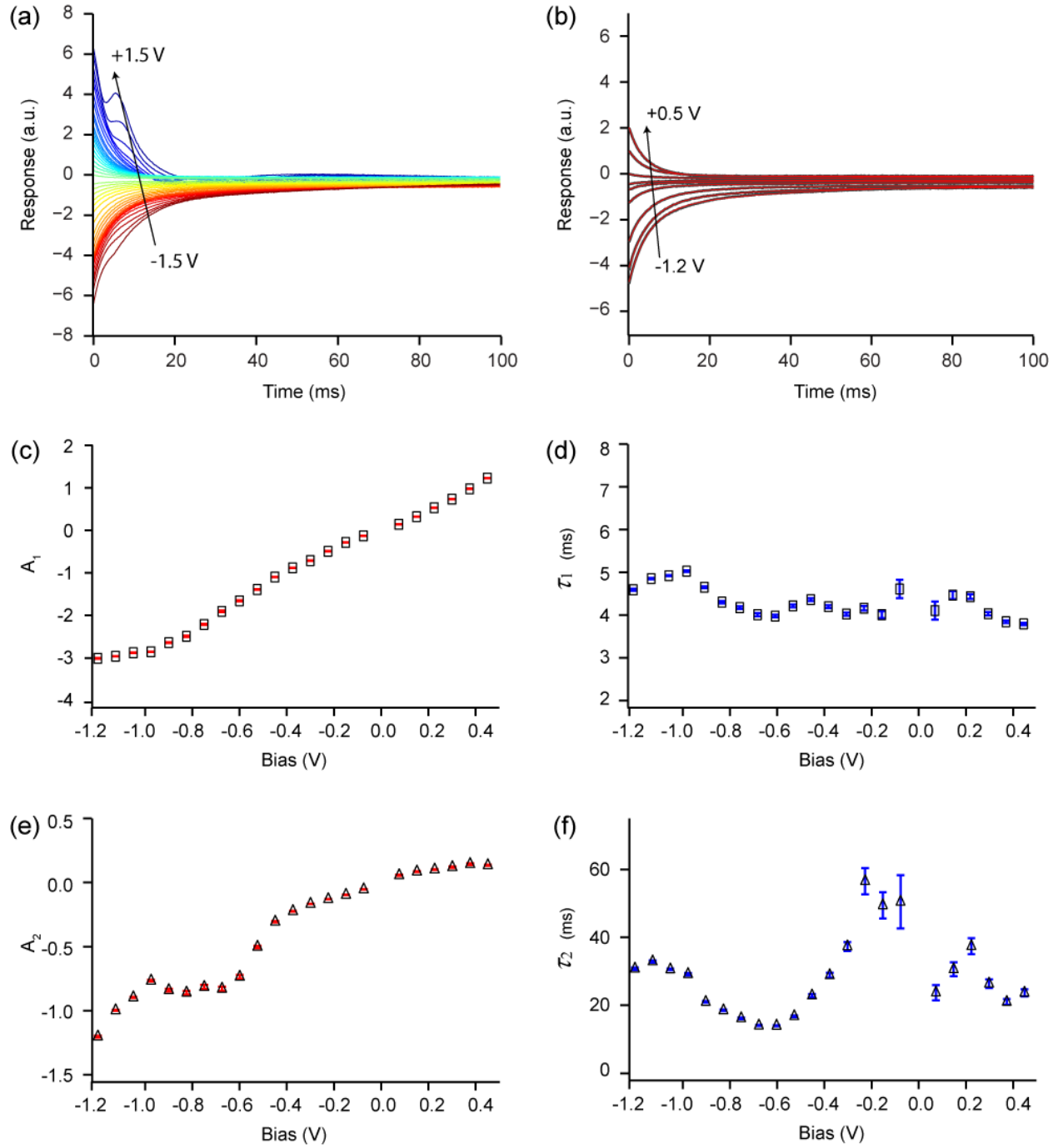


Figure S2: (a) Transient time profiles of EcFM A_{ω}^{mixed} response [bias-on] collected in milliQ water. (b) A selection of double exponential fits (red) to the experimental data (grey) between -1.2 V and $+500$ mV. Bias dependence of the fitting coefficients (\pm std. dev.) showing (c) A_1 (d) τ_1 (e) A_2 (f) τ_2 , where the fitting equation was defined as $f(x) = y_0 + A_1 e^{-t/\tau_1} + A_2 e^{-t/\tau_2}$.

Linear fitting of the EcFM mixed response for determination of CPD

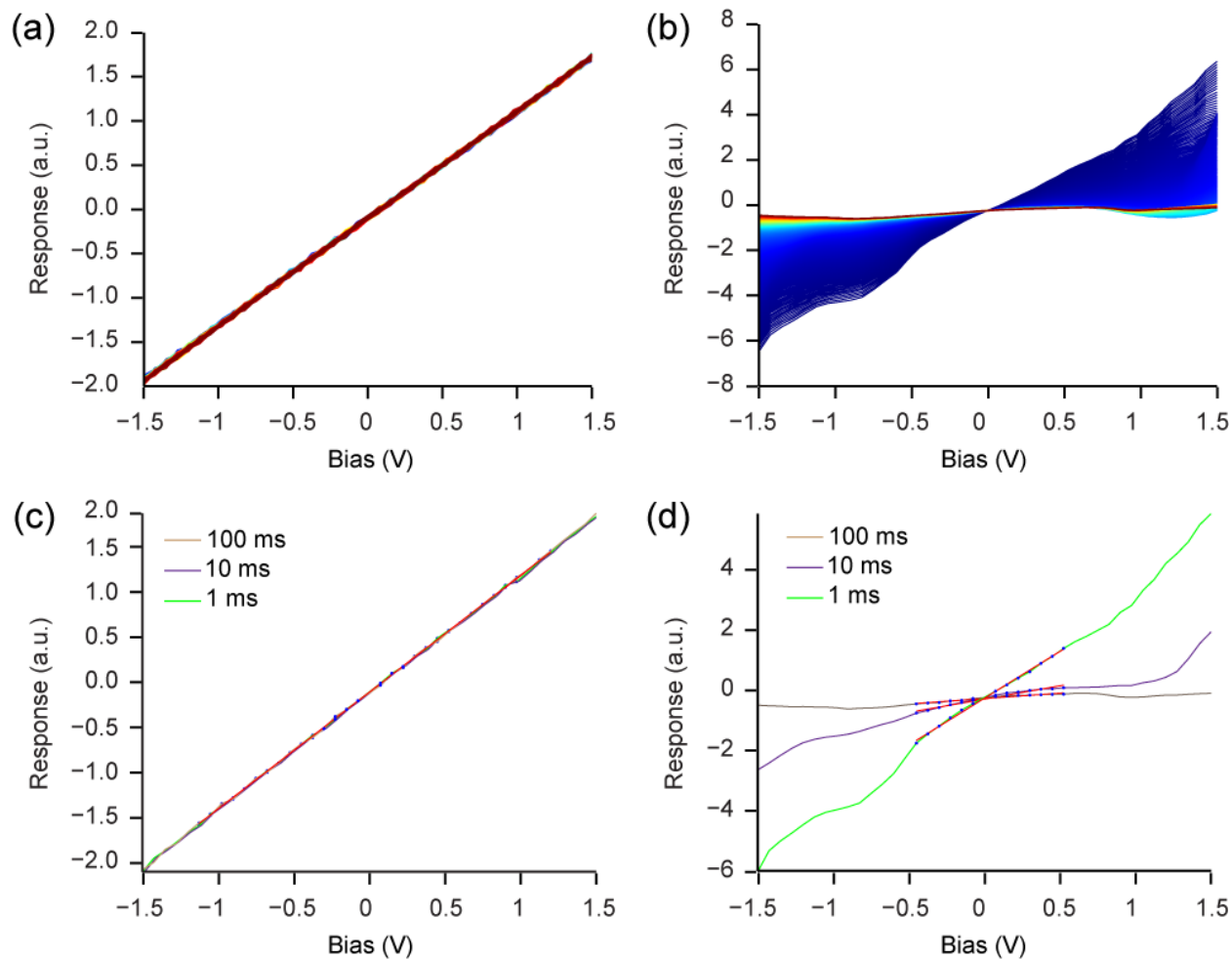


Figure S3: EcFM A_{ω}^{mixed} response [bias on] recorded 200 nm above a grounded Au electrode in (a) decane and (b) milliQ water, as shown in Fig 3. Corresponding linear fitting for 3 timescales (1, 10 and 100 ms) for (c) decane (full bias range) and (d) milliQ water (-500 to $+500$ mV).