

Supplementary Information:

Identifying the Charge Storage Mechanism in Polyimide Anodes for Na-ion Aqueous Batteries by Impedance Spectroscopy

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Fitting Parameters for the EIS analysis

Table S1. Fitting parameters calculated by fitting the impedance spectra at different potentials.

The small relative errors of individual parameters indicate their significance in the description of the impedance response and generally good fit quality. The errors are estimated by the fitting software and reflect the maximum deviation of the respective parameter, for which the root mean square deviation remains below a certain threshold.

Parameter	-300 mV vs SSC		-400 mV vs SSC		-500 mV vs SSC		-600 mV vs SSC	
	Value	Error / %	Value	Error / %	Value	Error / %	Value	Error / %
$C_{geo} / \mu F$	28.9	5.98	40.4	10.2	35.5	4.37	35.0	3.77
$C_{dl} / \mu F$	118	5.01	52.7	4.79	92.2	4.37	99.7	4.03
$C_{a,2} / mF$	1.85	18.7	4.04	16.9	4.25	8.45	4.26	7.56
$C_{a,1} / mF$	15.3	3.78	60.8	2.96	104	2.39	109	2.30
R_U / Ω	2.52	0.59	2.51	0.39	2.51	0.23	2.51	0.21
R_{geo} / Ω	0.86	2.22	0.38	2.92	0.53	1.25	0.57	1.09
$R_{ct,2} / \Omega$	1.20	3.38	0.99	2.39	0.66	2.22	0.66	2.06
$R_{a,2} / \Omega$	0.77	8.13	0.57	8.55	0.70	4.56	0.72	4.08
$R_{ct,1} / \Omega$	13.3	3.12	4.96	2.02	3.51	1.48	3.49	1.38
$W / \Omega s^{-1/2}$	15.8	1.42	7.94	1.93	5.33	1.71	5.09	1.63
Parameter	-700 mV vs SSC		-800 mV vs SSC		-900 mV vs SSC		-1000 mV vs SSC	
	Value	Error / %	Value	Error / %	Value	Error / %	Value	Error / %
$C_{geo} / \mu F$	32.3	2.75	30.7	2.25	28.5	2.72	1290	4.00
$C_{dl} / \mu F$	142	4.19	173	4.00	148	4.15	23.5	2.67
$C_{a,2} / mF$	4.65	6.63	4.74	5.78	3.75	7.79	0.31	7.17
$C_{a,1} / mF$	114	2.41	114	2.59	59.3	3.11	9.44	3.72
R_U / Ω	2.53	0.19	2.55	0.17	2.57	0.23	2.61	0.41
R_{geo} / Ω	0.68	0.81	0.75	0.66	0.83	0.84	1.68	1.88
$R_{ct,2} / \Omega$	0.55	2.10	0.51	1.95	0.66	1.98	1.31	1.49
$R_{a,2} / \Omega$	0.68	3.43	0.67	2.82	0.63	3.44	0.95	3.08
$R_{ct,1} / \Omega$	3.52	1.43	3.77	1.46	5.92	2.03	28.4	2.74
$W / \Omega s^{-1/2}$	4.26	1.47	3.61	1.34	4.69	1.23	18.8	0.81