Electronic Supplementary Material (ESI) for Reaction Chemistry & Engineering.

Supplementary Information

Table 1: Consolidated table presenting the overall results from experimental variations performed from bioelectrochemical reduction of bicarbonates to acetate production.

Substrate concentration (g HCO_3^-/L)	*1.0*	*1.5*	*2.0*	*2.5*	*4.0*	*8.0*[€]	*12.0*[€]	*15.0*[¥]
Maximum C-conversion efficiency (%)	77.23	78.61	91.33	93.71	73.01	61.67	45.30	41.08
Average C-conversion efficiency (%)	74.01	74.92	81.99	84.01	67.04	52.37	38.58	41.08
Maximum acetate production per cycle (mg L^{-1})	251	280	503	776	969	379	241	106
Maximum acetate concentration (g L^{-1}) *	1.24	1.45	2.14	3.58	4.97	0.60	0.34	0.11
Acetate production rate (mg $L^{-1}d^{-1}$) [#]	35.46	41.51	61.31	102.40	142.22	60.50	33.50	21.20
Current density (mA m^{-2}) [$]	-42.00	-63.00	-84.00	-101.20	-69.10	-33.80	-24.60	-22.30
Average coulombic efficiency (CE, %)	45.55	39.56	40.37	56.25	139.41	112.24	79.96	47.98

* - Total acetate production from 7 cycles of operation (from 1.0 to 4.0 g HCO_3^-/L); from 2 cycles for 8 and 12 g HCO_3^-/L and 1 cycle for 15 g HCO_3^-/L.

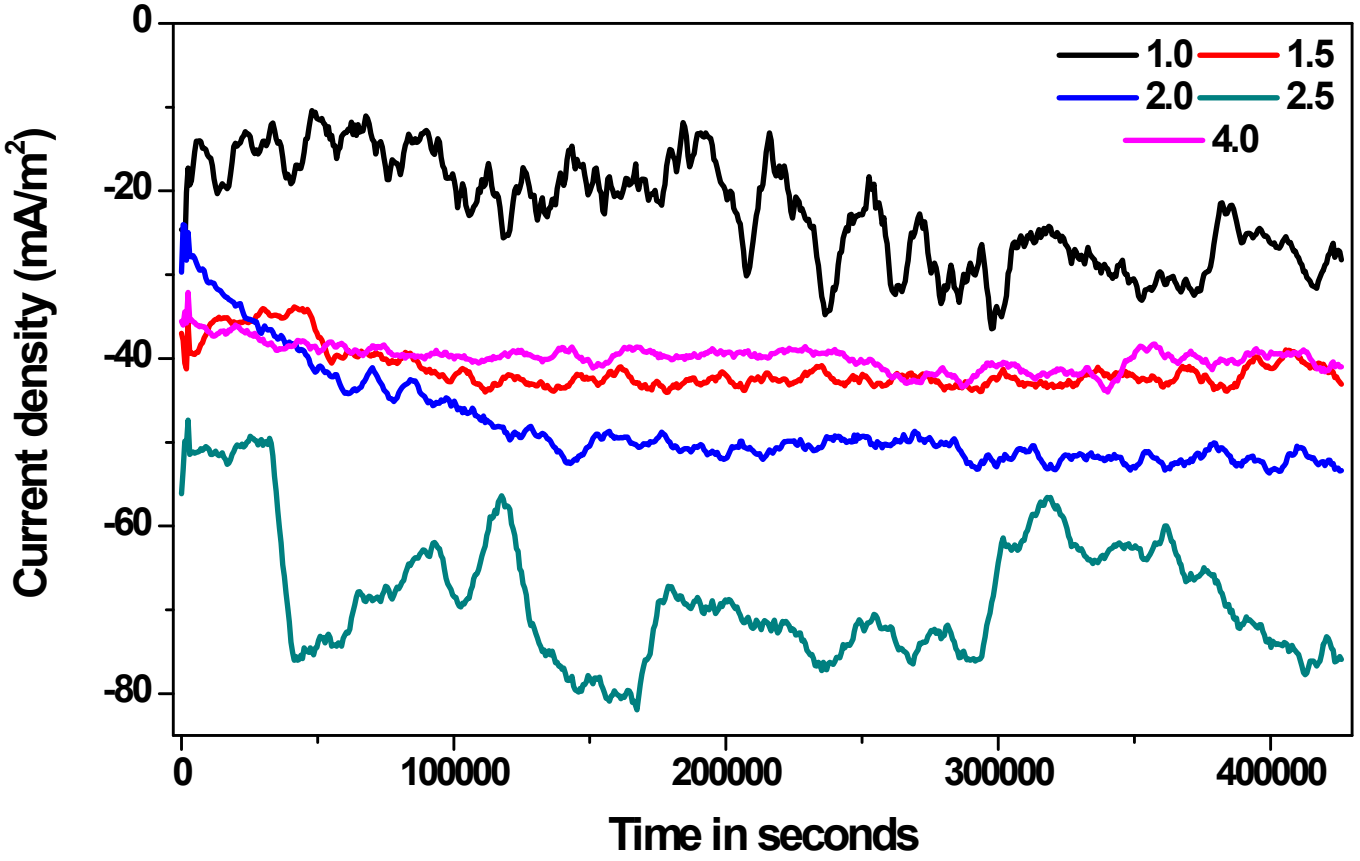
[&] - Based on the maximum acetate concertation

[#] - Average calculated from 7 cycles (from 1.0 to 4.0 g HCO_3^-/L); from 2 cycles for 8 and 12 g HCO_3^-/L and 1 cycle for 15 g HCO_3^-/L.

[$] - Calculated based on the projected surface area of electrode

[€] Operated only for 2 cycles and the presented results were average of 2 cycles

[¥] Operated only for 1 cycle



SFigure 1: Current density vs time recorded thorugh chronoamperometry with 600 seconds as the time interval for each record with 5 bicarbonate variations stuided. All the values from the second cycle of each bicarbonate concentration studied.