SUPPORTING INFORMATION for

EFFECT OF [Na$^+$]/[Li$^+$] RATIO OF CONCENTRATIONS IN BRINES ON LITHIUM CARBONATE PRODUCTION THROUGH MEMBRANE ELECTROLYSIS

Walter R. Torres[a], Nadia C. Zeballos[a,b], Victoria Flexer[a,*]

[a] Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy-CIDMEJu (CONICET-Universidad Nacional de Jujuy). Av. Martijena S/N, Palpalá, 4612, Argentina.
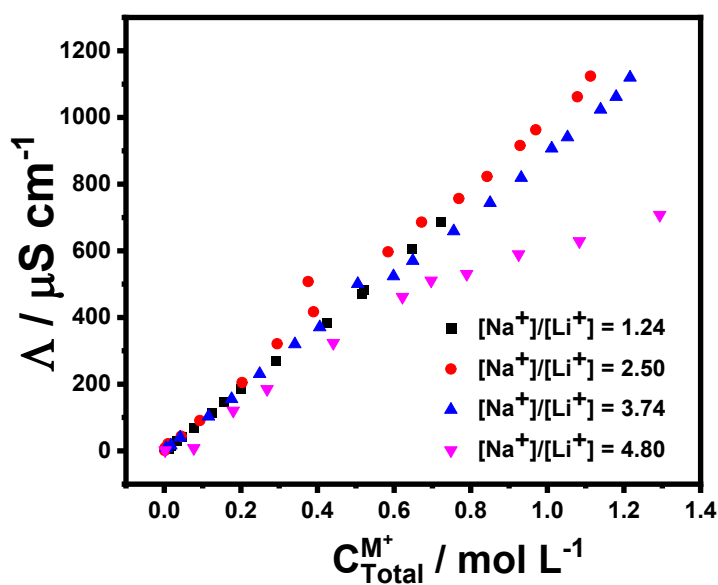
[b] Instituto Nacional de Tecnología Industrial (INTI) Sede Jujuy. Av. Martijena S/N, Palpalá, 4612, Argentina.
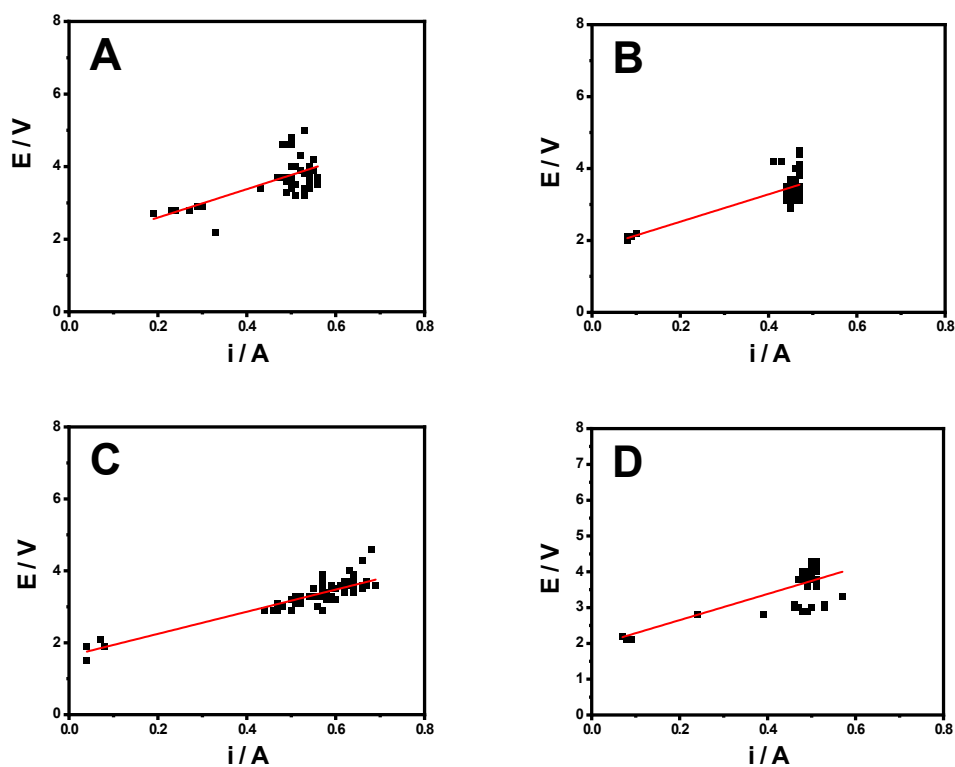
*Corresponding author:

Victoria Flexer: vflexer@unju.edu.ar
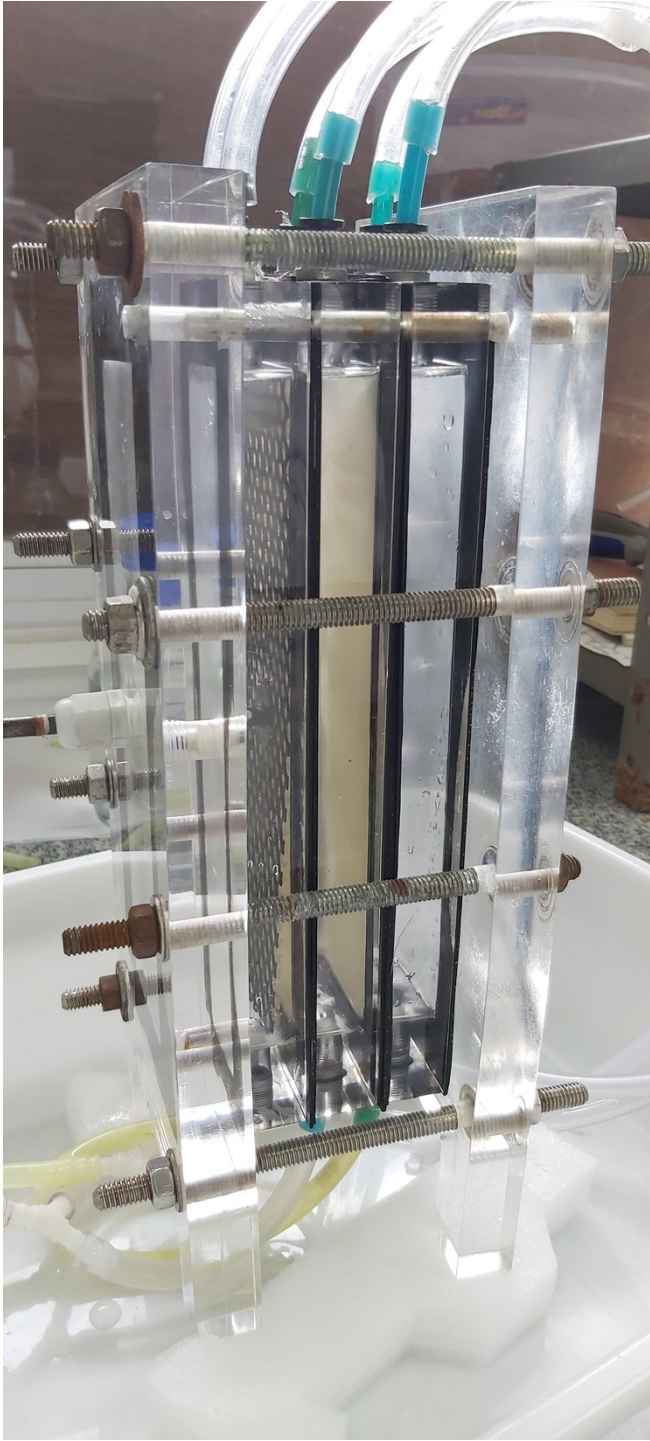
Figure S1: Picture of the water electrolyzer used throughout the experiments.

Figure S2. Conductivity values in the middle compartment as a function of the total ionic concentrations. All conductivity values correspond to 1:100 dilutions of the test solutions.


Figure S3. Cell potential vs. current density for the first 50% of the electrolysis. A-D correspond to increasing $[Na^+]/[Li^+]$ ratio of concentrations.
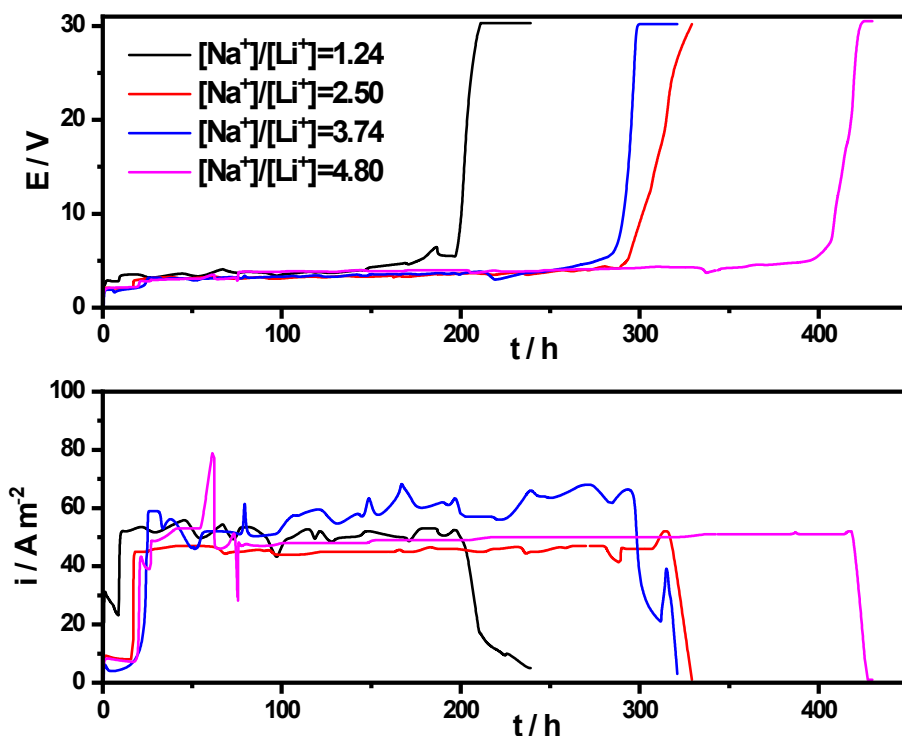
Figure S4. Cell voltage-time plots (top) and current-time plots (bottom), for the membrane electrolysis experiments with feed solutions with different $[Na^+]/[Li^+]$ concentration ratios.

$[Na^+]/[Li^+]$ Ratio	Cathodic compartment initial	Cathodic compartment final	Middle compartment initial	Middle compartment final	Anodic compartment initial	Anodic compartment final
	g cm^{-3}					
1.24	1.00	1.1862	1.028	0.994	1.100	1.100
2.50	1.00	1.1903	1.036	0.997	1.100	1.100
3.74	1.00	1.2276	1.044	0.986	1.100	1.100
4.80	1.00	1.2241	1.060	0.995	1.100	1.100

Table S1: Density values of the original solutions and after completion of the electrolysis. These values were used to convert solution volumes to mass values.
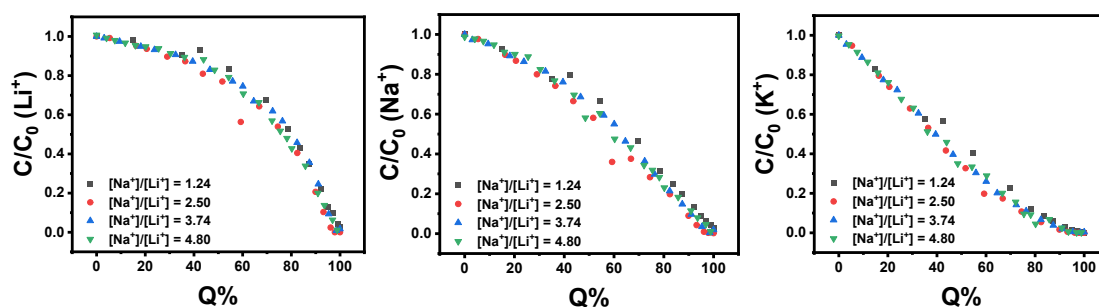
Figure S5. Comparison of the normalized concentrations in the middle compartment for all 4 experiments.