

Supporting Information

Activated Luffa derived biowaste carbon for enhanced desalination performance in brackish water

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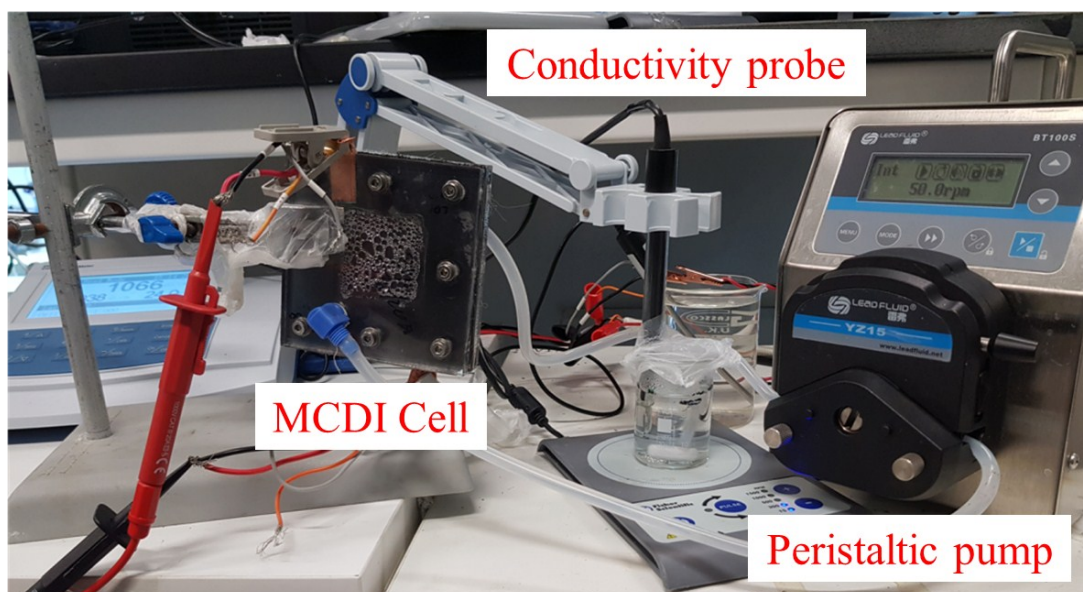


Fig. S1 MCDI experimental setup.

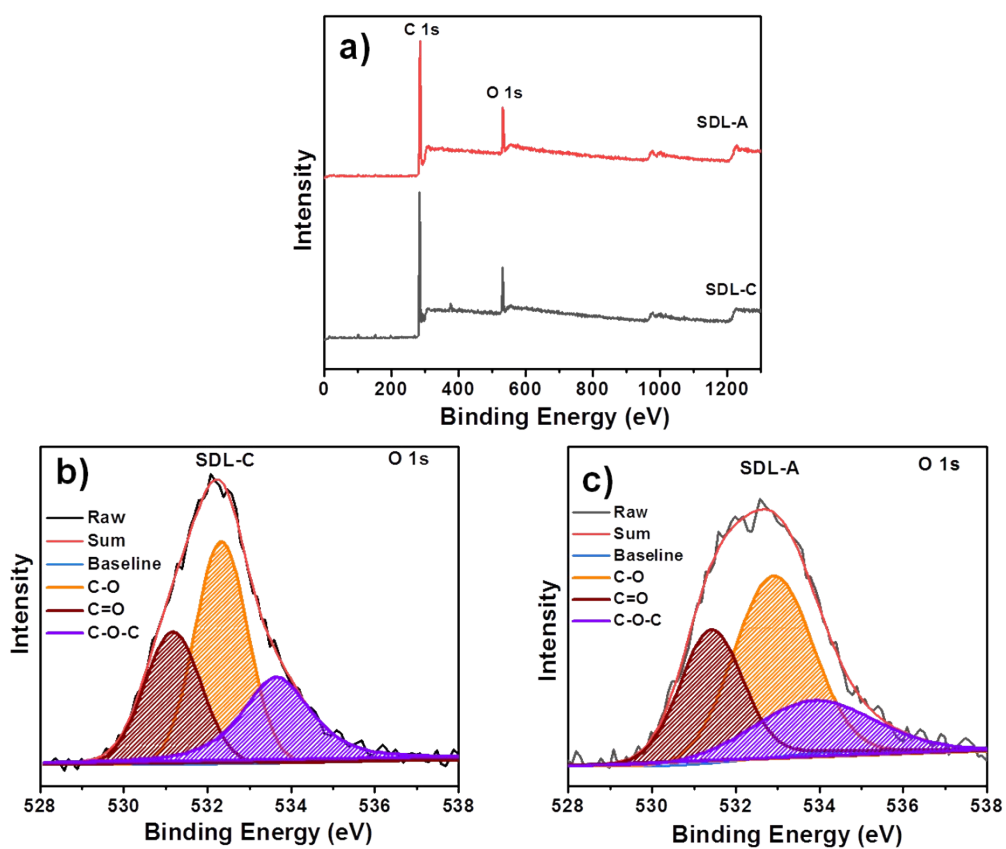


Fig. S2 (a) Full scan XPS spectrum of SDL-C and SDL-A and High resolution spectra of O 1s for (b) SDL-C and (c) SDL-A.

Table. S1 Parameters of electronics elements in the equivalent circuit in Figure 4a

Sample	R_e (Ω)	R_{ct} (Ω)	Z_w (Ω)
SDL-C	6.001	61.9	1.976
SDL-A	1.457	4.129	0.086

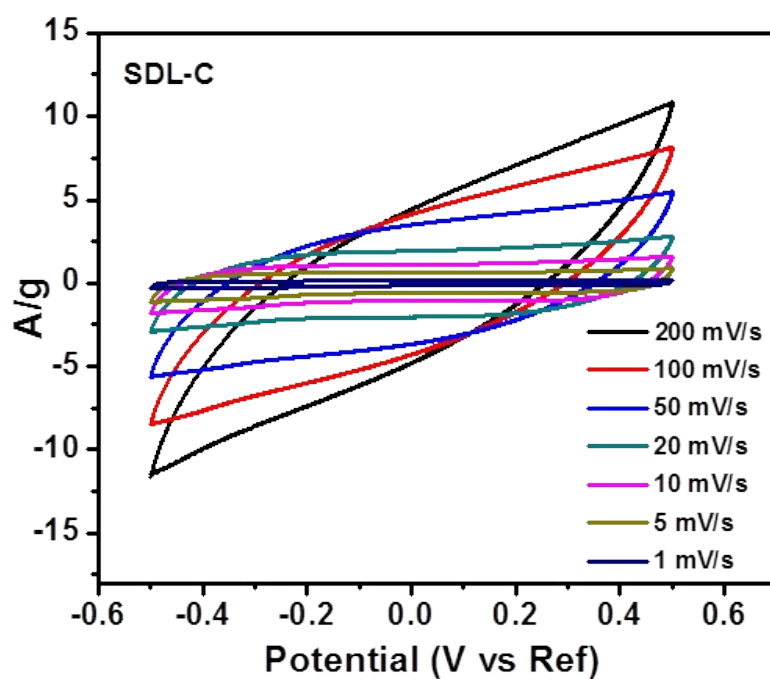


Fig. S3 CV curves of SDL-C at a different scan rate from 1 mV to 200 mV/s, measured in a three-electrode system with 1M NaCl electrolyte solution.

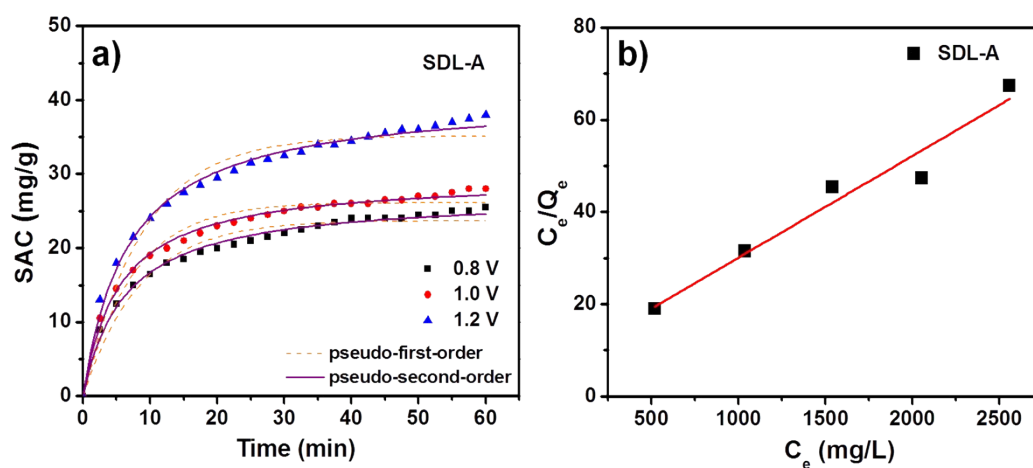


Fig. S4. (a) The electrosorption kinetics of NaCl onto the SDL-A electrodes at different voltages, and (b) Langmuir adsorption isotherm of NaCl onto the SDL-A at different equilibrium concentrations at 1.2 V.

Table S2 Parameters of Langmuir isotherm study of SDL-A in 2500 mg/L NaCl solution at 1.2 V

Sample	R_e (Ω)
Linear equation	$Y = 0.02209x + 7.98835$
Coefficients	$q_m = 45$ mg/g, $K_L = 0.0027$ L/mg
R^2	0.94234