

Supplementary information

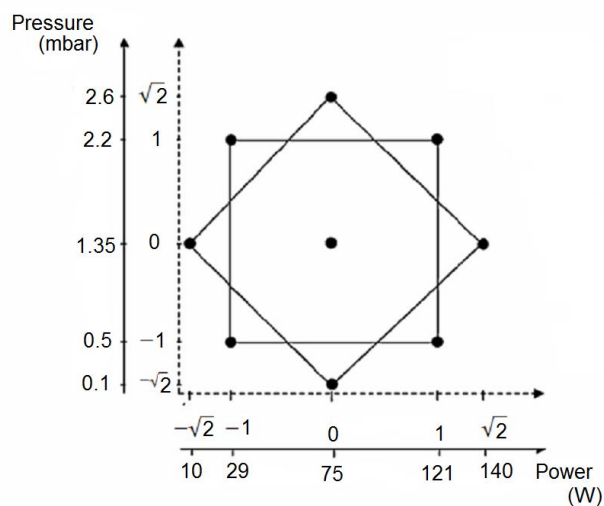


Fig. S1. Box-Wilson experimental design samples distribution for two main parameters (RF power and water pressure).

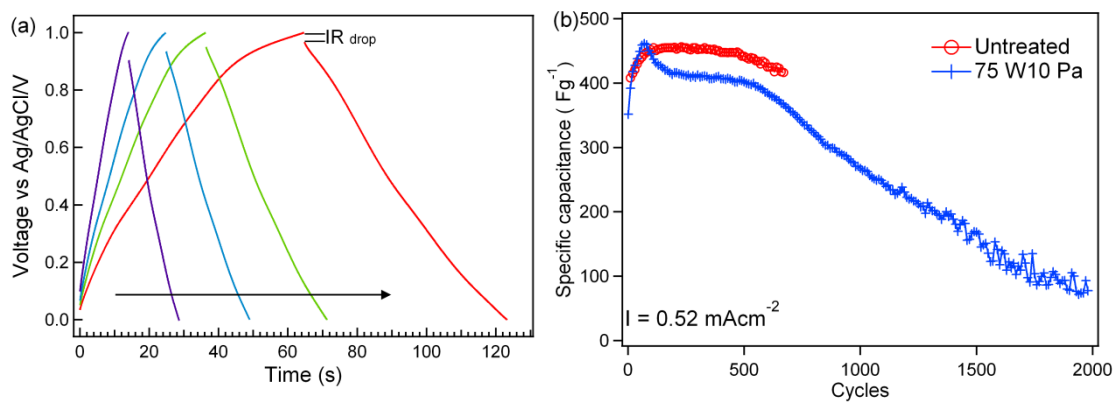


Fig. S2. (a) Charge/discharge curves obtained at different current densities from 0.1, 0.2, 0.3, 0.4 mAcm^{-2} , as indicated by the arrow for wpCNTs/ MnO_2 (10 W, 135 Pa) and (b) charge/discharge cyclic stability between 0 and 1 V for untreated and water plasma treated CNTs/ MnO_2 electrodes.

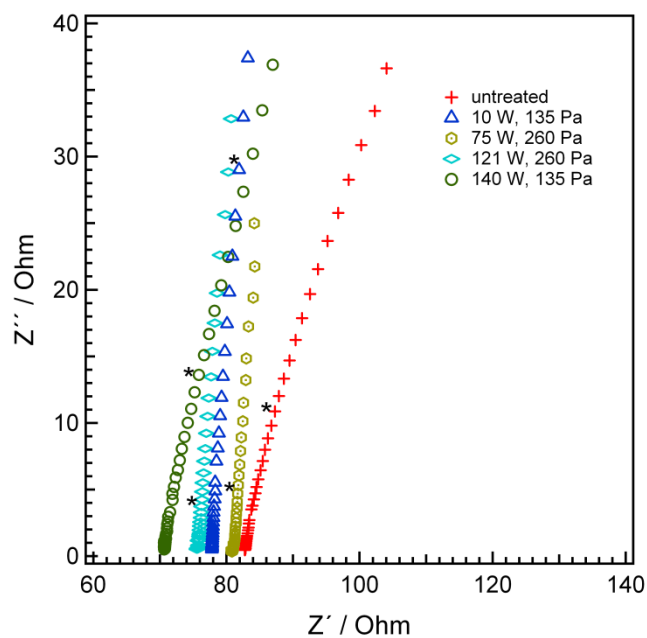


Fig. S3 Nyquist plot of untreated and different wpCNTs/MnO₂ samples. Asterisks correspond to a frequency of 9.32 Hz.

Table S4. Peak position and percentage area of different bonds obtained from XPS O1s spectra .

Sample		(BE) (eV)	% area
wpCNTs/MnO ₂ before cycling	Mn-O-Mn	529.44	33.79
	Mn-O-OH	530.88	24.36
	H-O-H	532.39	13.89
	Chemisorbed oxygen	535.26	27.96
wpCNTs/MnO ₂ (0 – 1 V) after 2000 cycles	Mn-O-Mn	529.29	20.88
	Mn-O-OH	530.71	13.69
	H-O-H	523.36	7.68
	Chemisorbed oxygen	535.07	57.75
wpCNTs/MnO ₂ (0.1 – 0.8 V) after 2000 cycles	Mn-O-Mn	529.31	23.17
	Mn-O-OH	530.84	17.37
	H-O-H	532.55	3.7
	Chemisorbed oxygen	534.91	55.75