

Supporting Information

Table S1. Comparison of the volumetric and gravimetric capacitances of various carbon materials at low current densities (0.05 - 0.2 A g⁻¹) in aqueous electrolyte.

Material	Electrolyte	Density (g cm ⁻³)	Gravimetric capacitance (F g ⁻¹)	Volumetric capacitance (F cm ⁻³)	Test device	Ref.
N-CS-850	1 M H ₂ SO ₄	0.97	297	287	2-electrode cell	This work
N-CSA-600	1 M H ₂ SO ₄	0.59	310	183	2-electrode cell	This work
LN-600 (N-doped carbon)	1 M H ₂ SO ₄	0.79	264	208	2-electrode cell	[1]
HPGM	6 M KOH	1.58	238	376	2-electrode cell	[2]
Z-900	0.5 M H ₂ SO ₄	0.93	214	200	3-electrode cell	[3]
CM	2 M H ₂ SO ₄	1.17	292	342	2-electrode cell	[4]
L-Y-900	1 M H ₂ SO ₄	0.56	250	140	2-electrode cell	[5]
SP4-3 (Activated carbon)	2 M H ₂ SO ₄	0.49	420	200	2-electrode cell	[6]
Microporous carbon spheres	30 % KOH	-	162	173	2-electrode cell	[7]
CDC film	1 M H ₂ SO ₄	-	-	160	2-electrode cell	[8]
RGO paper	6 M KOH	0.94	208	196	3-electrode cell	[9]
ALG-C	1 M H ₂ SO ₄	0.91	198	180	2-electrode cell	[10]
PVFC700	6 M KOH	0.826	264	218	2-electrode cell	[11]

Table S2. Comparison of the volumetric and gravimetric capacitances of various carbon materials at low current densities (0.05 - 0.2 A g⁻¹) in organic electrolyte (1 M TEABF₄/AN).

Material	Voltage window	Density (g cm ⁻³)	Gravimetric capacitance (F g ⁻¹)	Volumetric capacitance (F cm ⁻³)	Test device	Ref.
N-CS-850	2 V	0.97	107	102	2-electrode cell	This work
N-CSA-600	2.5 V	0.59	154	92	2-electrode cell	This work
LN-900t	2.3 V	0.8	94	75	2-electrode cell	[1]
HPGM	2.5 V	1.58	110	174	2-electrode cell	[2]
a-MEGO compressed	2.7 V	0.75	130	98	2-electrode cell	[12]
SWNT	2.5 V	0.55	80	44	2-electrode cell	[13]
ZTC-S	2.5 V	-	190	83	2-electrode cell	[14]
Aerosol carbon	2.7 V	0.75	115	86	2-electrode cell	[15]

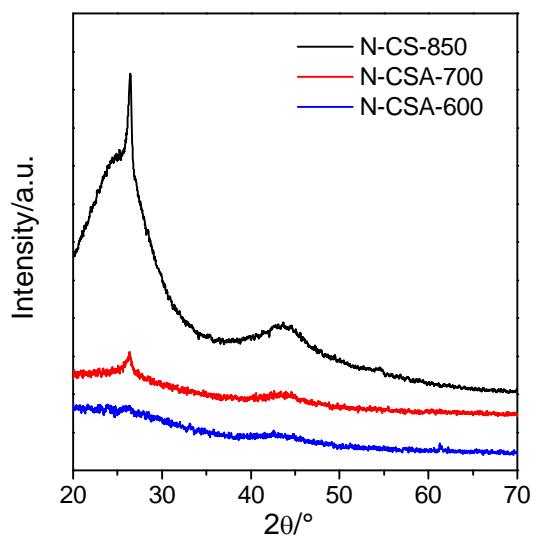


Figure S1. XRD patterns of the N-CS-850, N-CSA-700 and N-CSA-600 samples.

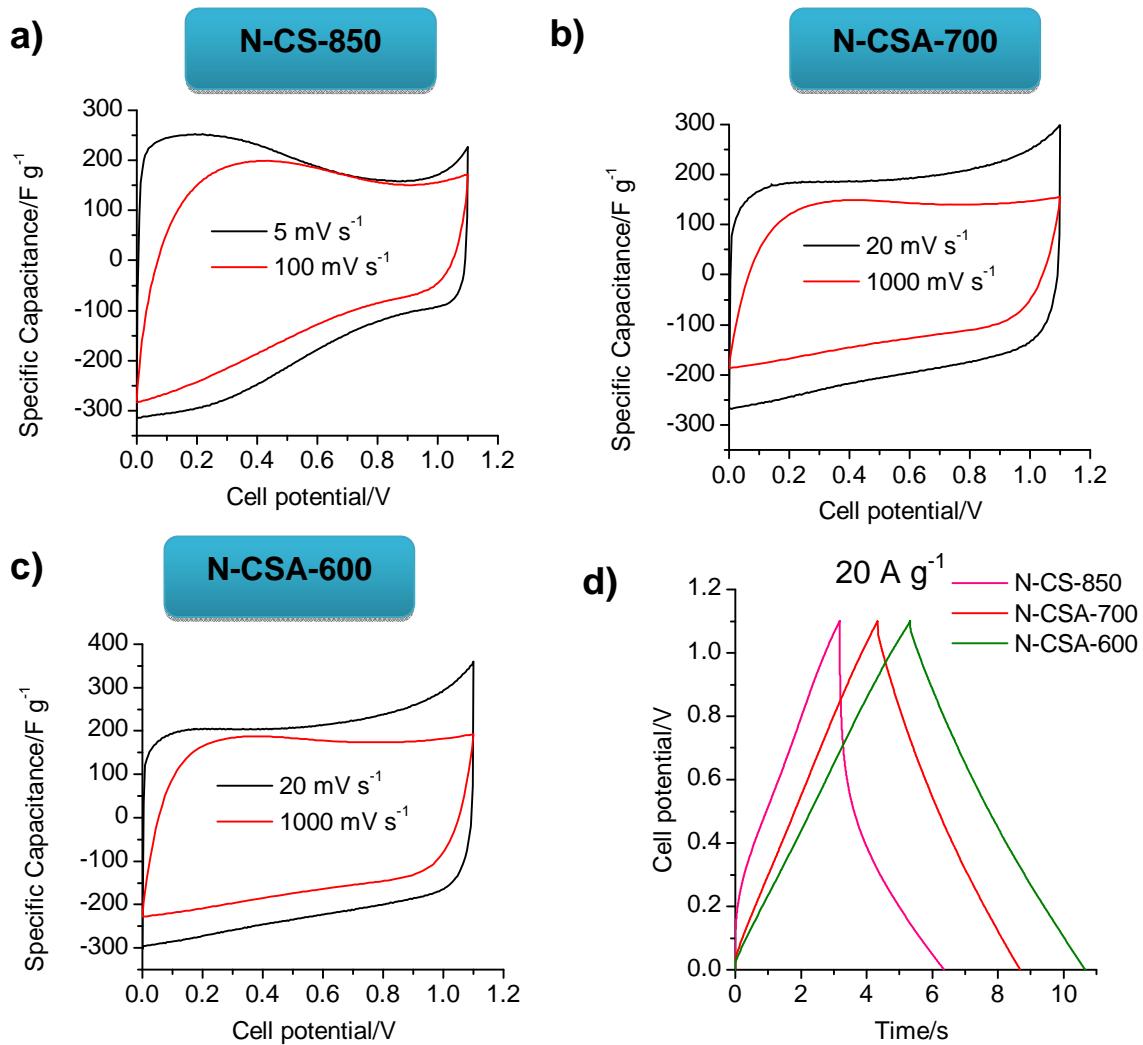


Figure S2. Cyclic voltammograms at different scan rates corresponding to (a) N-CS-850, (b) N-CSA-700 and (c) N-CSA-600, and (d) galvanostatic charge-discharge voltage profiles at 20 A g^{-1} for the N-doped microspheres in 2-electrode cells in $1 \text{ M H}_2\text{SO}_4$.

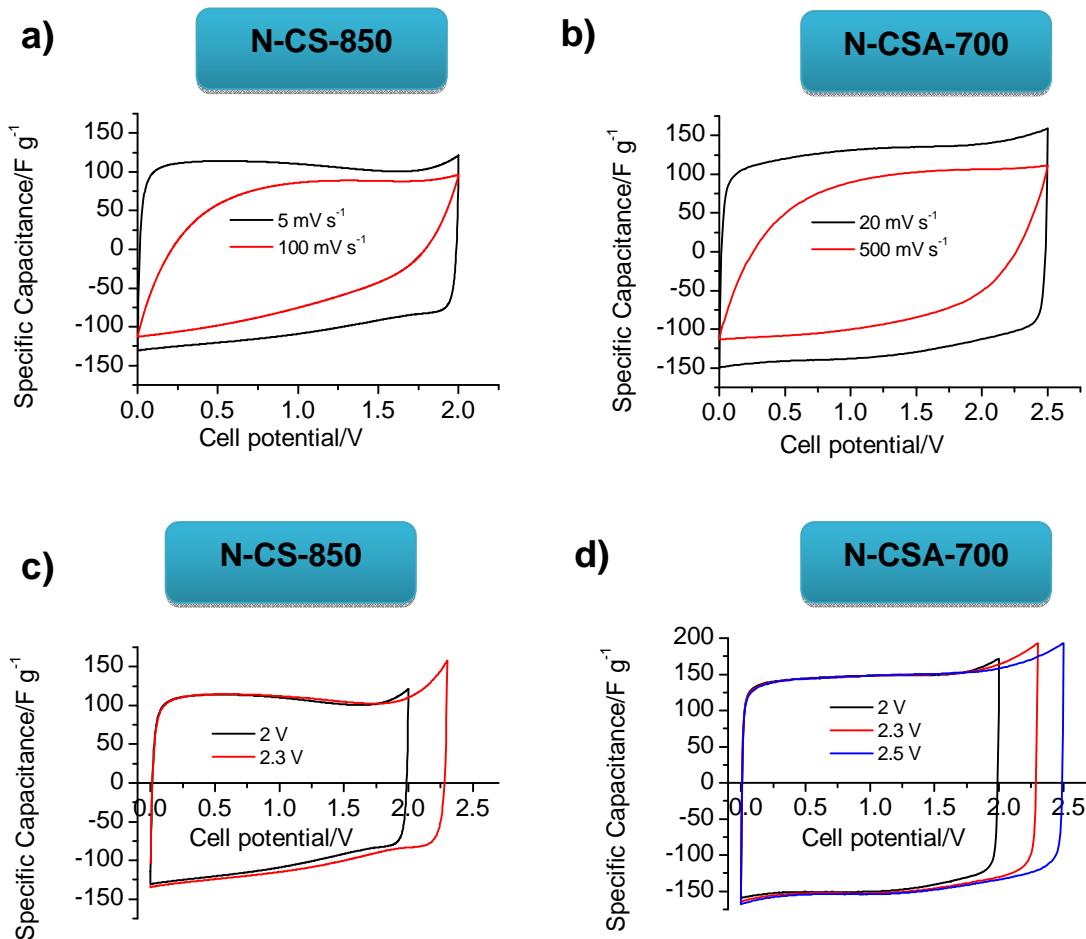


Figure S3. Cyclic voltammograms at different scan rates corresponding to (a) N-CS-850, (b) N-CSA-700, and enlargement of the voltage window in the case of (c) N-CS-850 and (d) N-CSA-700 in 2-electrode cells in 1 M TEABF₄/AN.

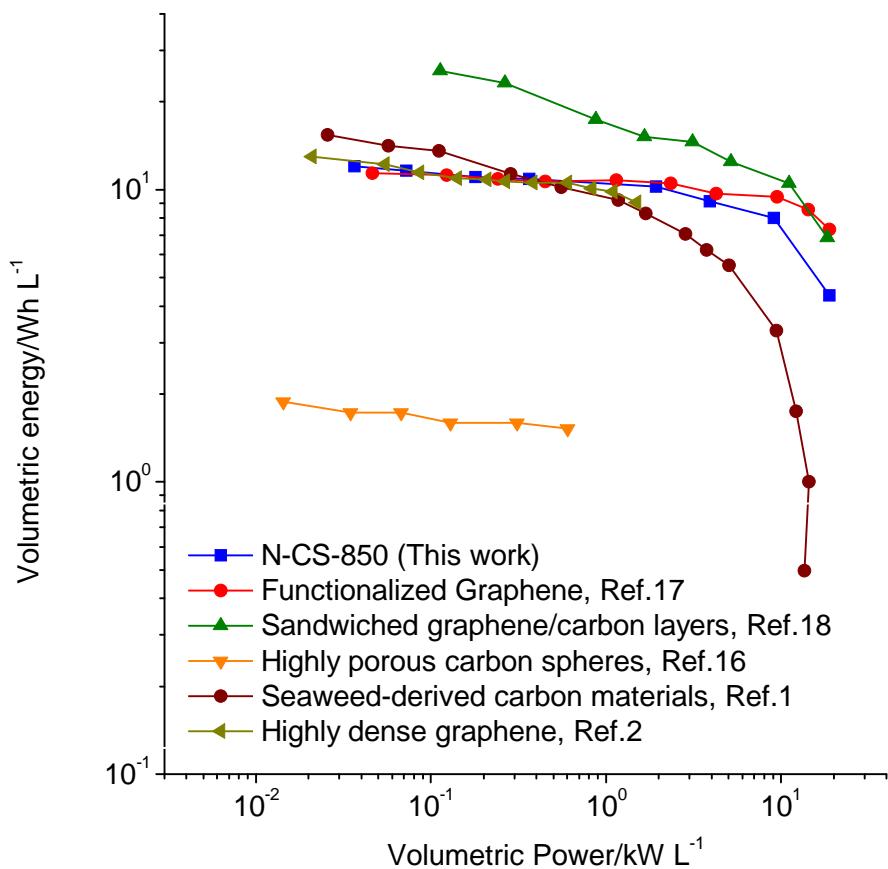


Figure S4. Ragone-like plot comparing the N-doped carbon microspheres developed in this work with the data reported in the literature in aqueous electrolyte.

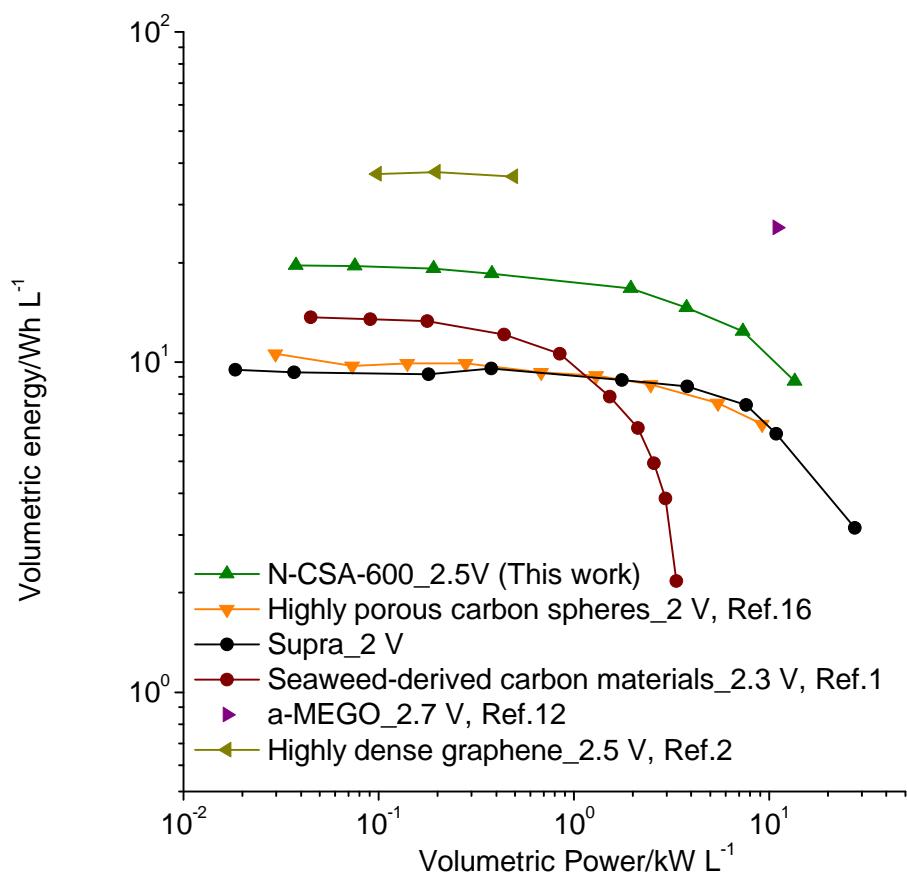


Figure S5. Ragone-like plot permitting a comparison of the N-doped carbon microspheres developed in this work with the data reported in the literature in TEABF₄/AN.

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