

Supporting Information

Nitrogen doping of graphene and its effect on quantum capacitance, and a new insight on the enhanced capacitance of N-doped carbon

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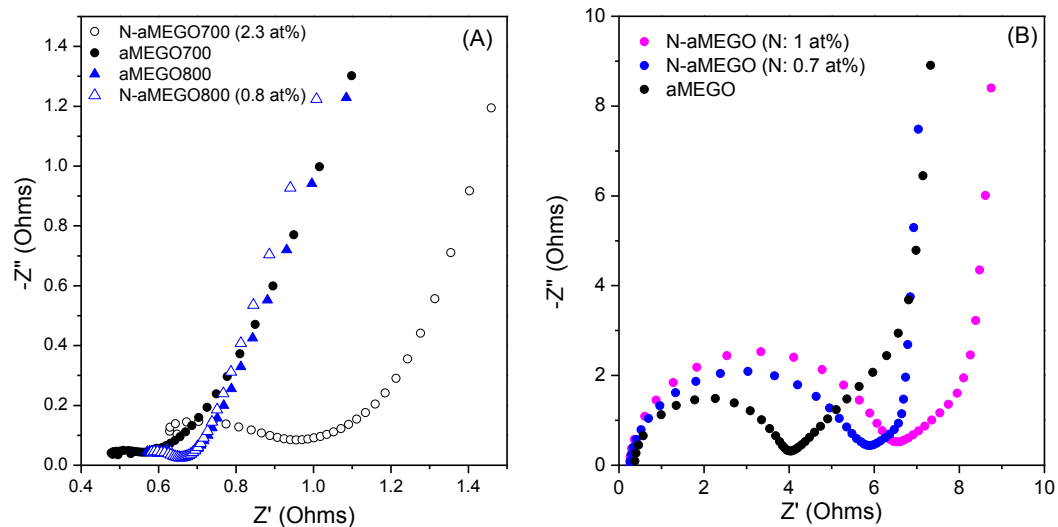


Figure S1. Nyquist plots of complex-plane impedance. (A) Nyquist plots for various aMEGO materials in 6M KOH electrolyte using a three-electrode configuration and (B) in 1M TEABF₄/AN using a two-electrode configuration.

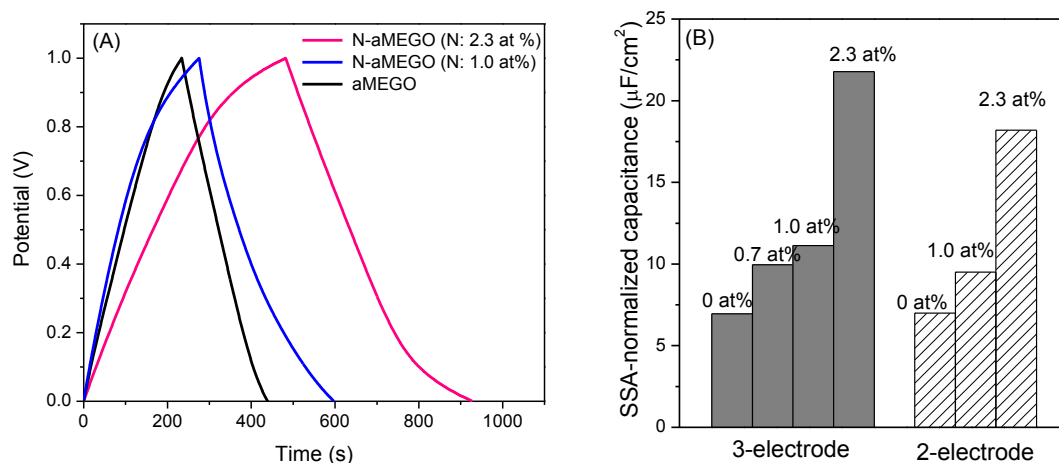


Figure S2. (A) Charge-discharge curves at a current density of 0.2 A/g for N-doped aMEGOs and un-doped aMEGO in 6M KOH electrolyte using a two electrode configuration. (B) The SSA-normalized capacitance at various N concentrations for samples tested in 6M KOH electrolyte using a three-electrode and a two-electrode setup, respectively.

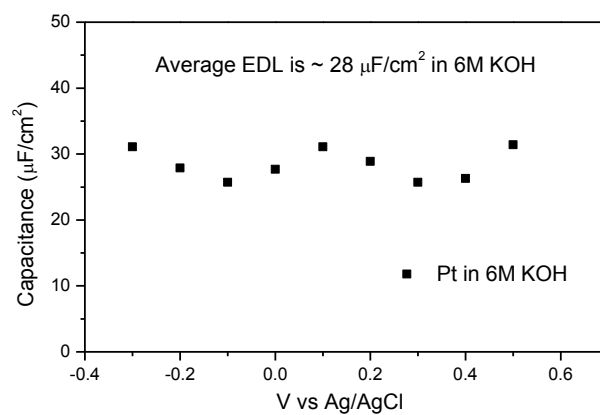


Figure S3. The interfacial capacitance of flat Pt surface measured in 6M KOH electrolyte.

Table S1. Synthesis conditions for pristine graphene and N-doped graphene (NG).

	Hydrogen (mTorr)	Methane (mTorr)	Pyridine (mTorr)	Total (mTorr)
Pristine-G	20	50	0	70
NG1	20	35	30	70
NG2	20	0	50	70

Table S2. Properties of various aMEGO and N-doped aMEGOs.

Samples	Activation Temperature (°C)	BET Surface area (m²/g)	N at %
aMEGO700	700	2300	0
N-aMEGO-1	700	2490	0.7
N-aMEGO-2	700	2512	1
N-aMEGO-3	700	1929	2.3
aMEGO800	800	2763	0
N-aMEGO800	800	2226	0.8