Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.
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Supporting Information

Flexible Supercapacitor Based on Vertically Oriented 'Graphene Forest' Electrodes

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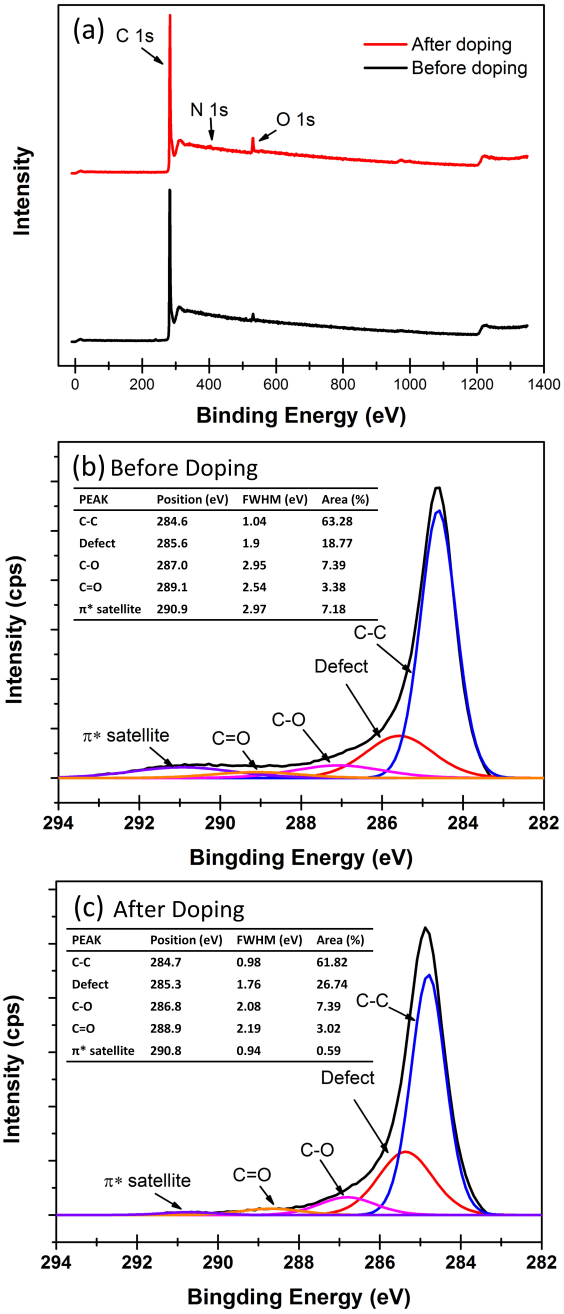

Figure S1. (a) XPS survey of graphene forest (GF) before (black line) and after (red line) doping by HNO_3.C1 s spectra of GF before (b) and after (c) HNO_3 doping.

As revealed by the SEM images of GF before and after HNO_3 doping (Figure S2-S3), the GF is robust that the nanostructure is not changed by doping.

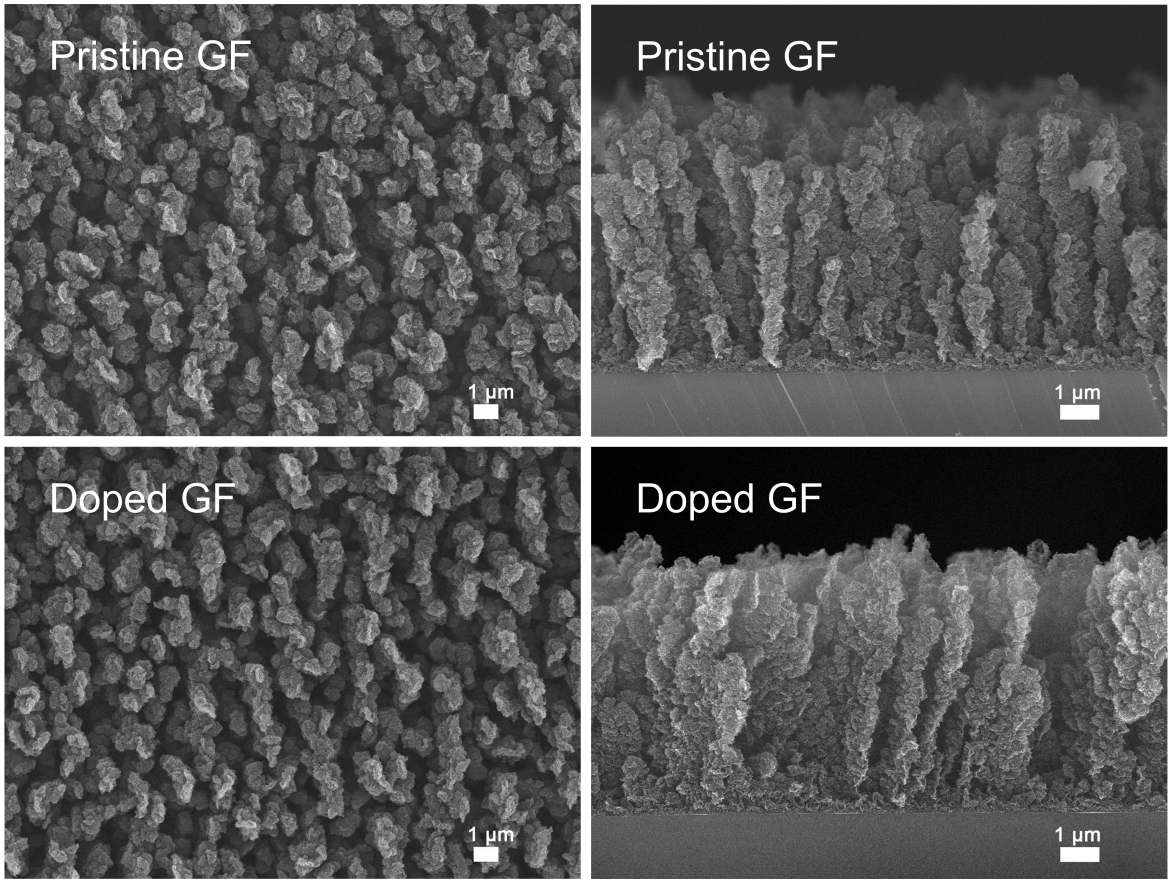

Figure S2. SEM images of GF before and after HNO_3 doping. No obvious structure change is observed.

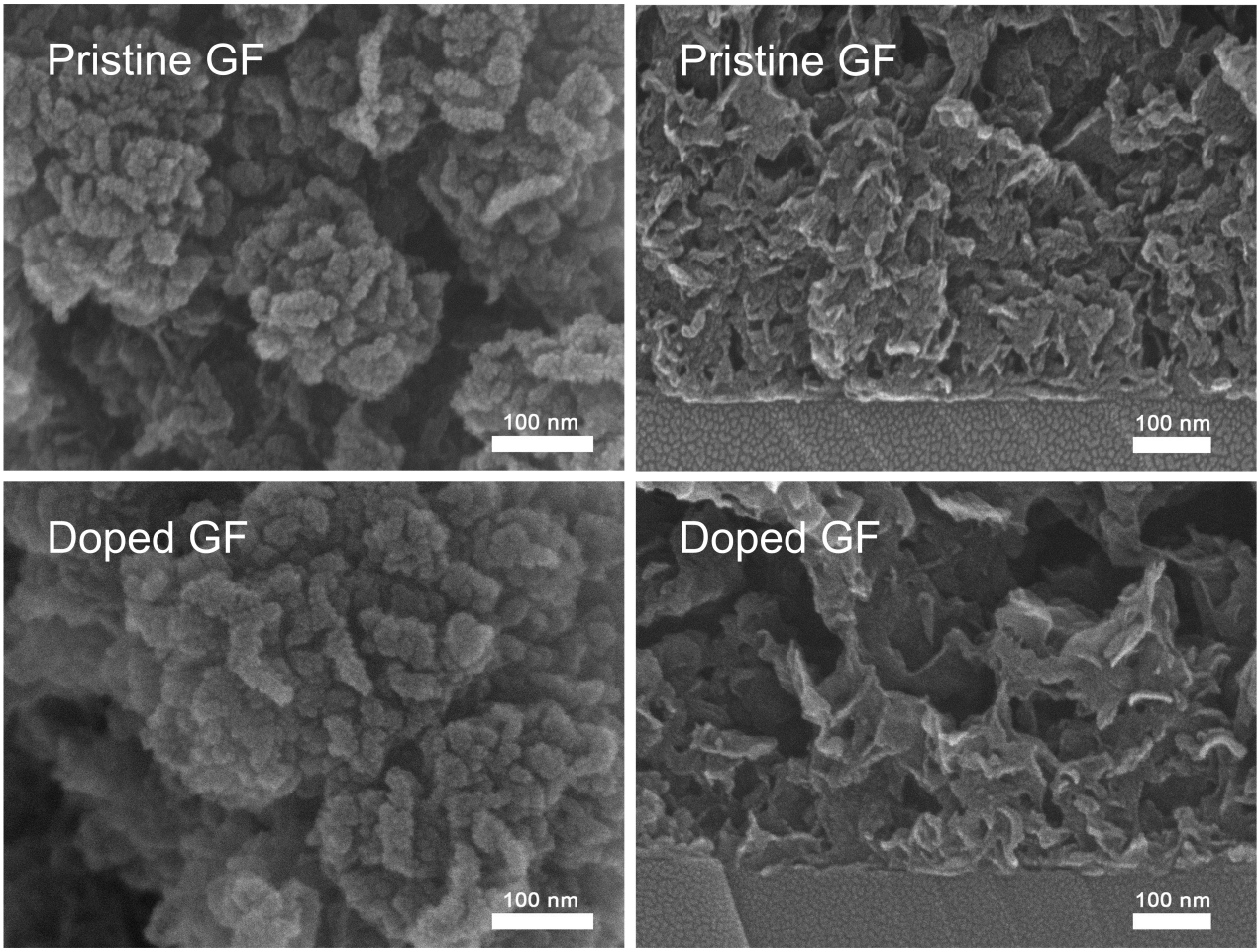

Figure S3. Top and cross-sectional SEM images of GF before and after HNO_3 doping.

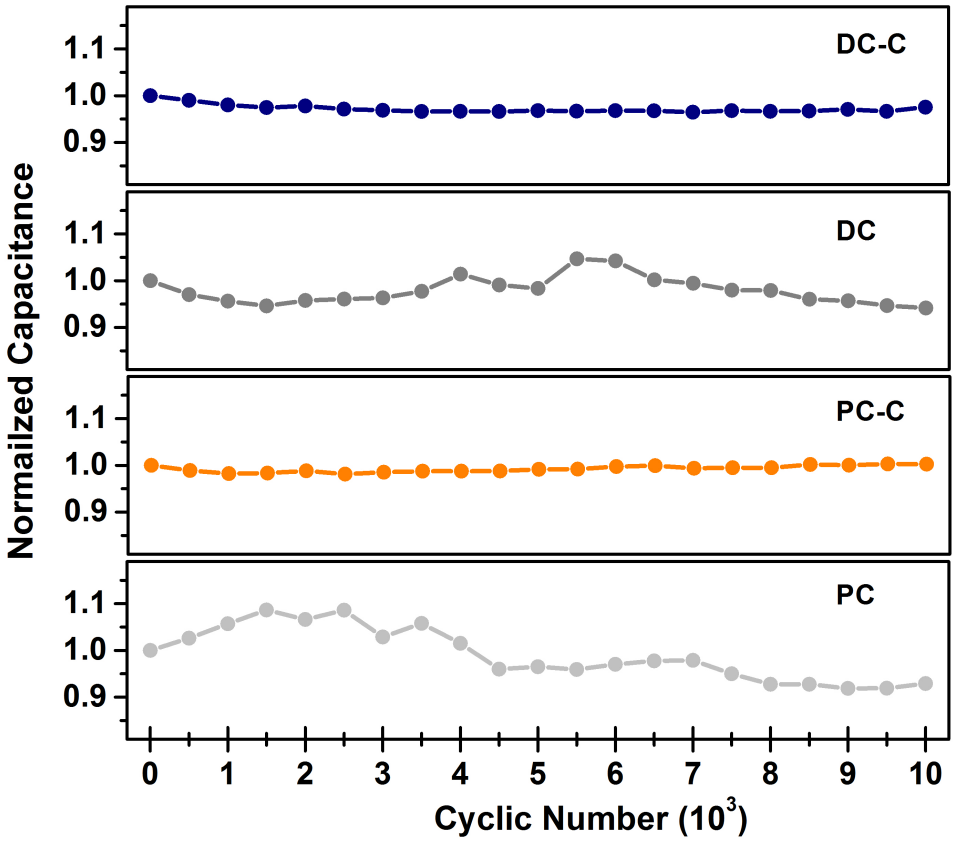

Figure S4. Normalized capacitance as a function of charge/discharge cycles at current density of 0.1 mA/cm^2 for four types of EDLCs: pristine EDLC (PC), doped EDLC (DC), PC with current collector (PC-C), DC with current collector (DC-C).

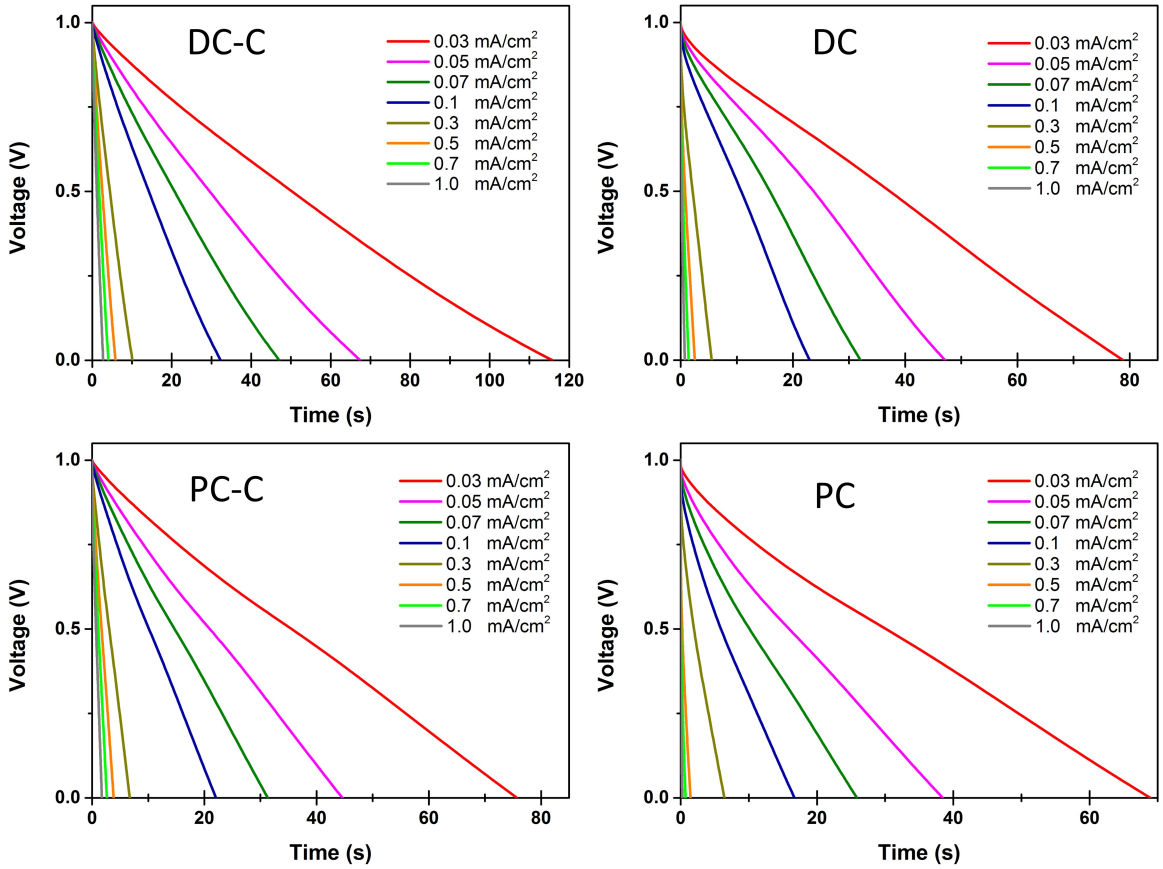

Figure S5. Galvanostatic charge/discharge plots at various current densities of four types of EDLCs: pristine EDLC (PC), doped EDLC (DC), PC with current collector (PC-C), DC with current collector (DC-C).

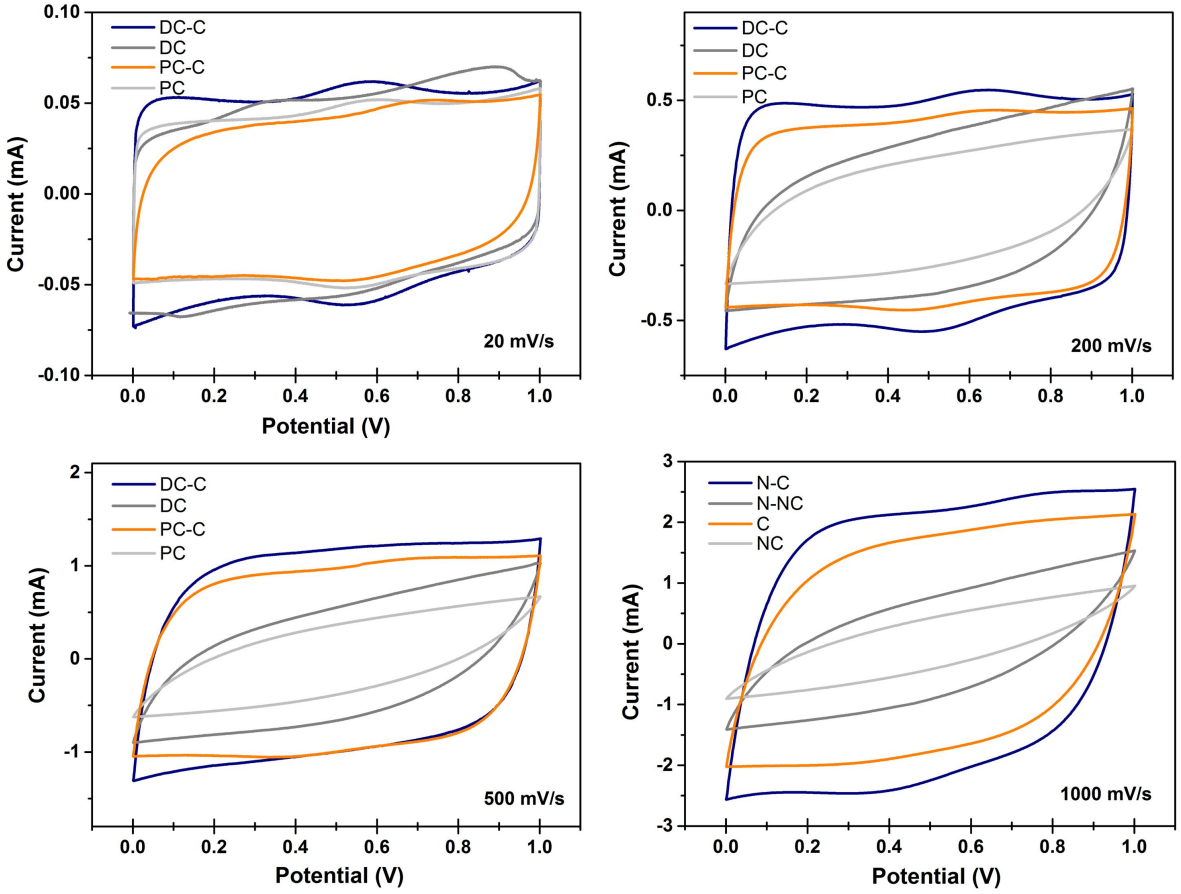

Figure S6. Cyclic voltammetry at various scan rates of four types of EDLCs.

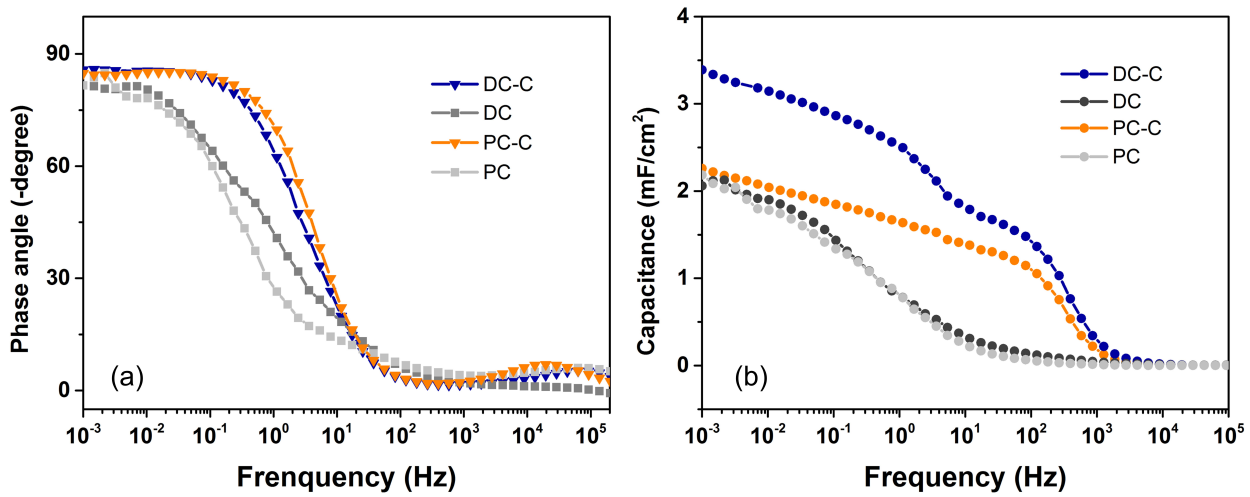

Figure S7. Impedance phase angle as functions of frequency (a) and plots of capacitance vs. frequency (b) of DC-C, PC-C, DC and PC.

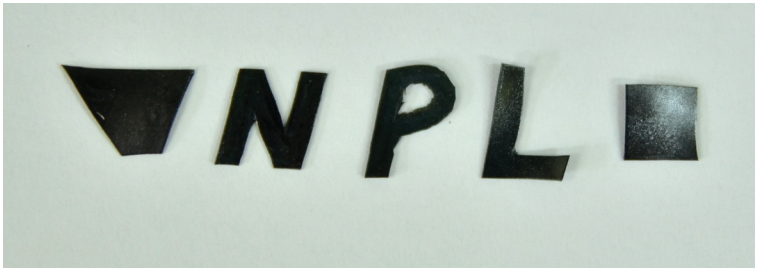

Figure S8. Patterned GF/PVA film by simple cutting process.

Table S1. Sheet resistance and atomic concentration change of GF before and after HNO_3 doping

	Sheet Resistance	C percent (%)	O percent (%)	N percent (%)
Before doping	110 Ω/sq	98.91	0.88	0.21
After doping	96 Ω/sq	96.30	3.39	0.31