Electronic Supplementary Material (ESI) for Green Chemistry.

Supporting Information for

Fabricating Carbon-Based Electrode Materials via Uptake of Amino Nano-Polystyrene into Pistia Stratiotes Root for Enhancing Supercapacitance

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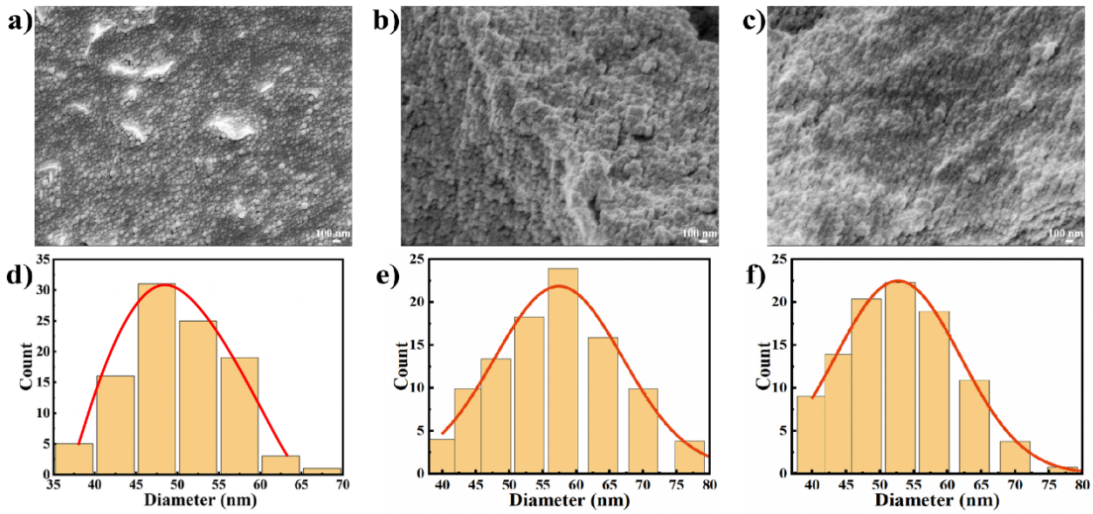

Figure S1 *SEM images and particle size distribution of PS, PS-NH_2 and PS-COOH.*

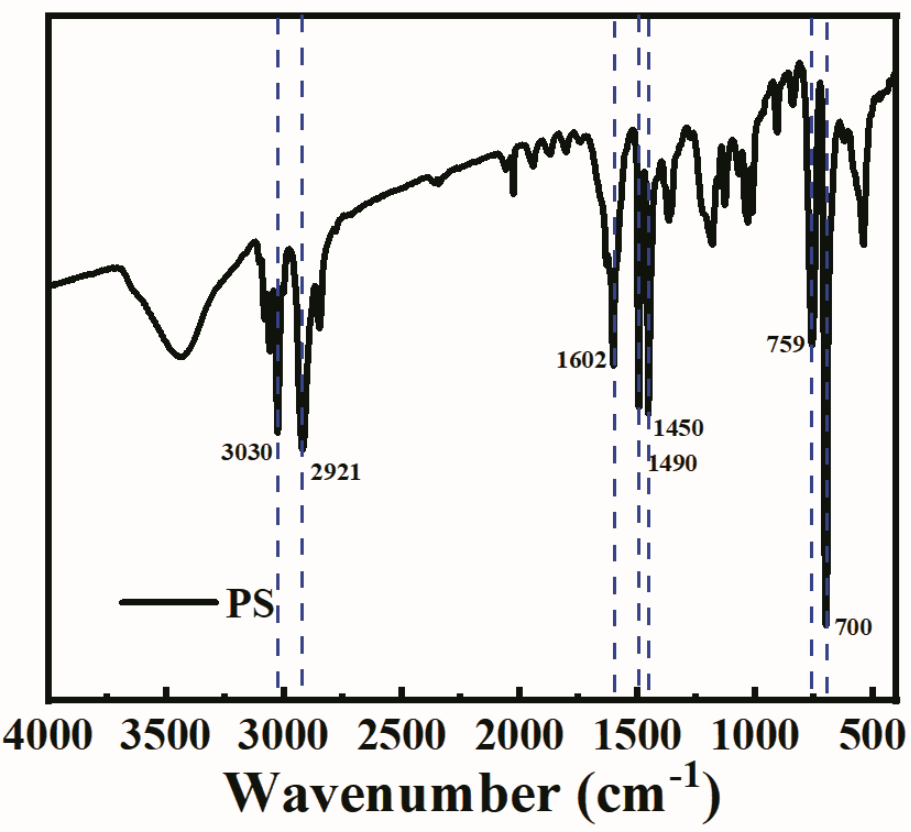

Figure S2 *FT-IR spectrum of PS NPs.*

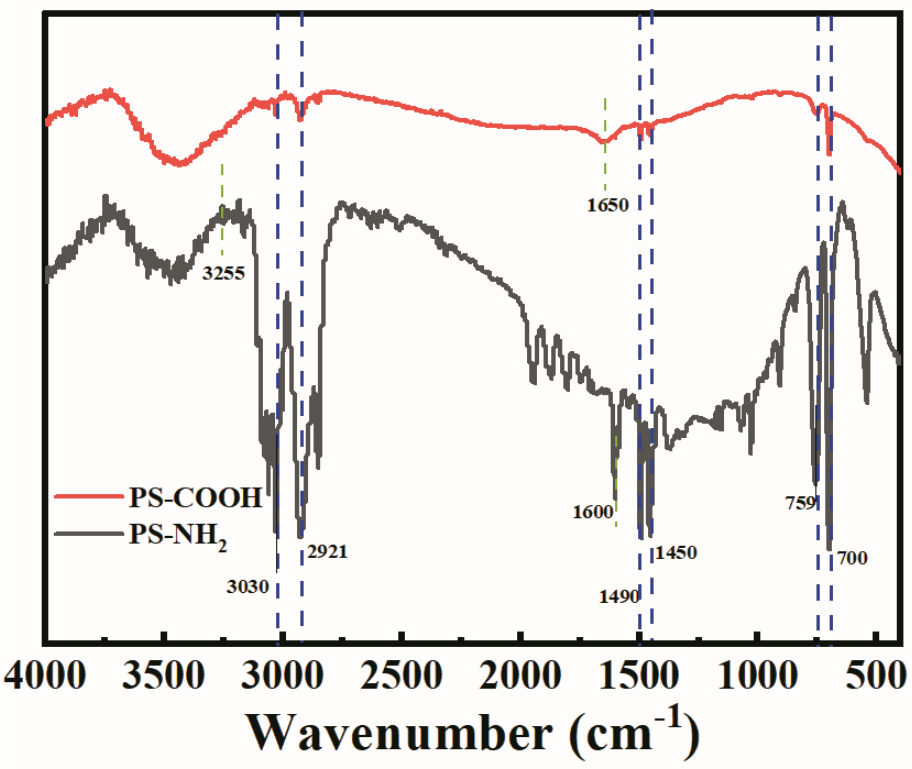

Figure S3 *FT-IR spectrum of PS-NH_2 and PS-COOH NPs*

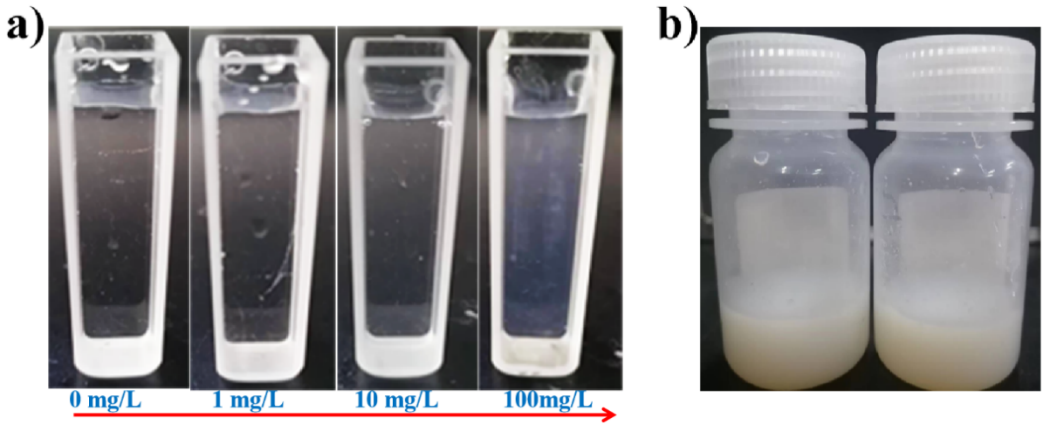

Figure S4 *a) PS NPs of different concentration, b) the purchased PS emulsion (left: PS-NH_2, right: PS-COOH).*

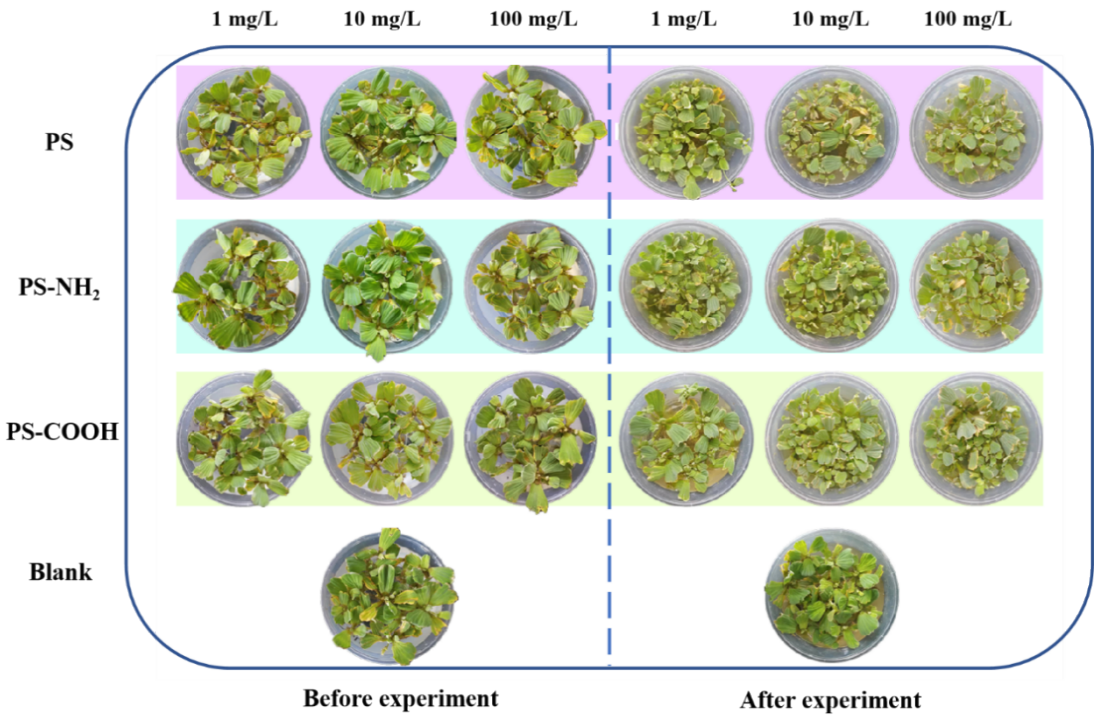

Figure S5. *Digital photos of Pistia stratiotes before and after experiment.*

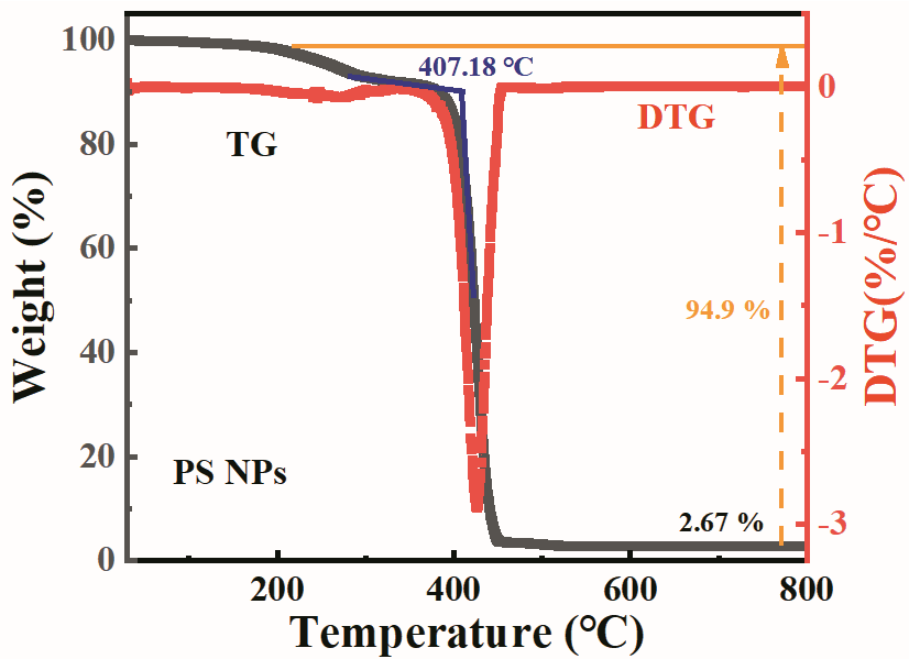

Figure S6 *TG/DTG curve of PS-NH_2 NPs.*

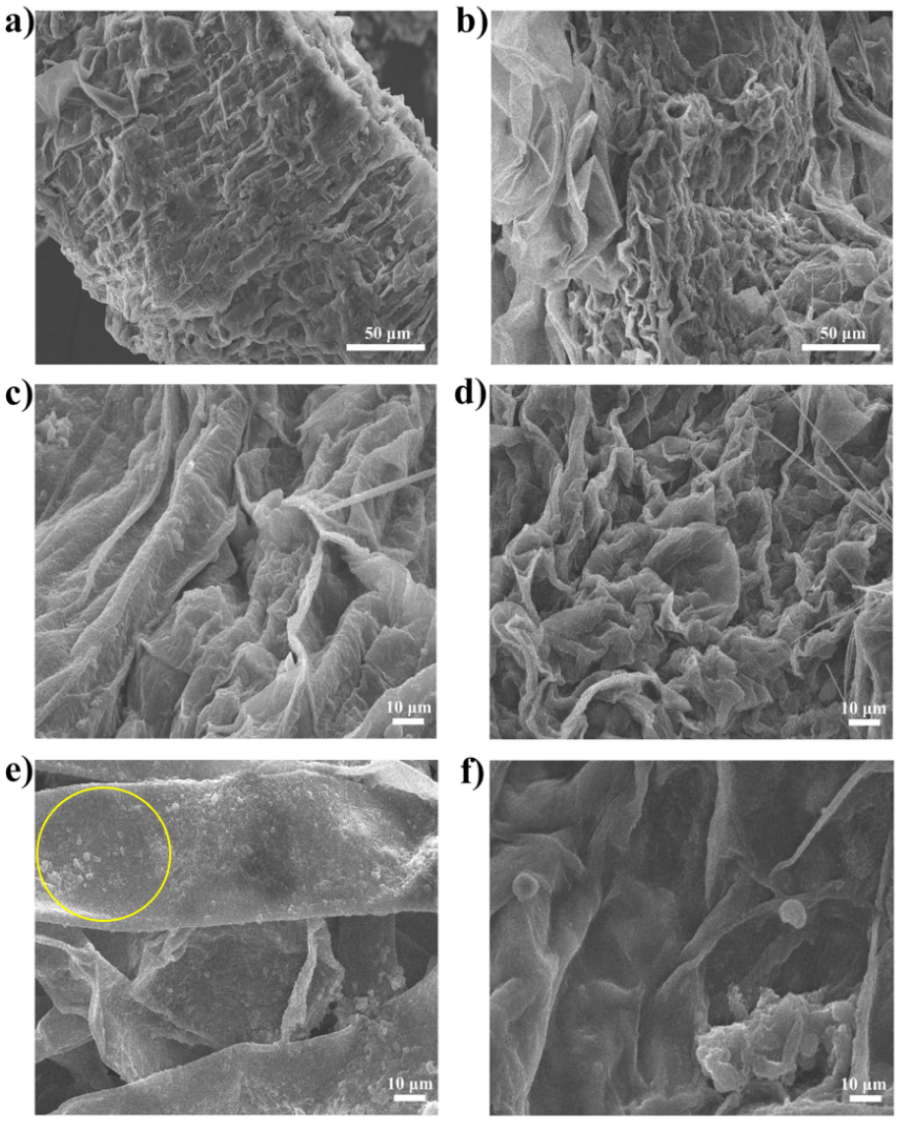

Figure S7 *SEM photos of different parts of Pistia stratiotes: a), c) roots of control group, b), d) shoots of control group, e), f) are the photos of roots/shoots of experimental group, respectively.*

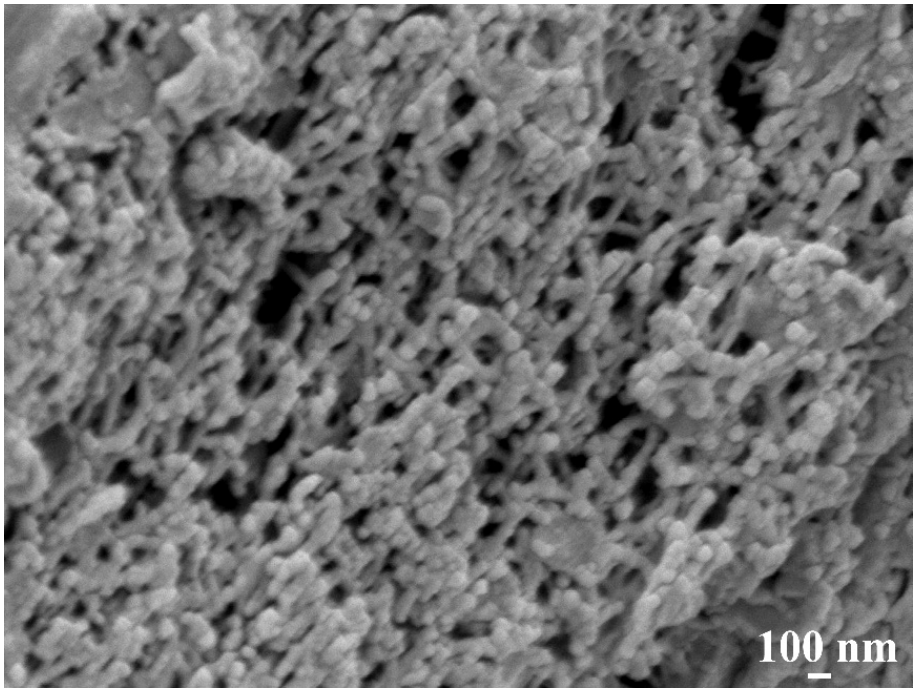

Figure S8 *SEM image of* $PC_{II_{100}}$. *Scale bar: 100 nm.*

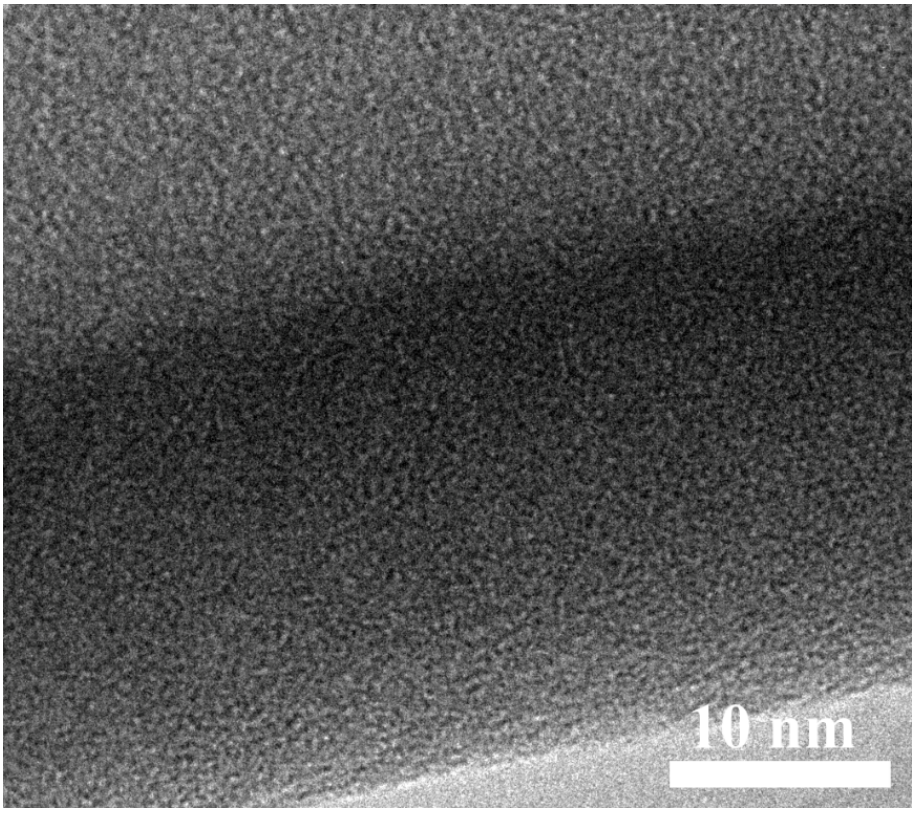

Figure S9 *TEM image of* $PC_{II_{100}}$.

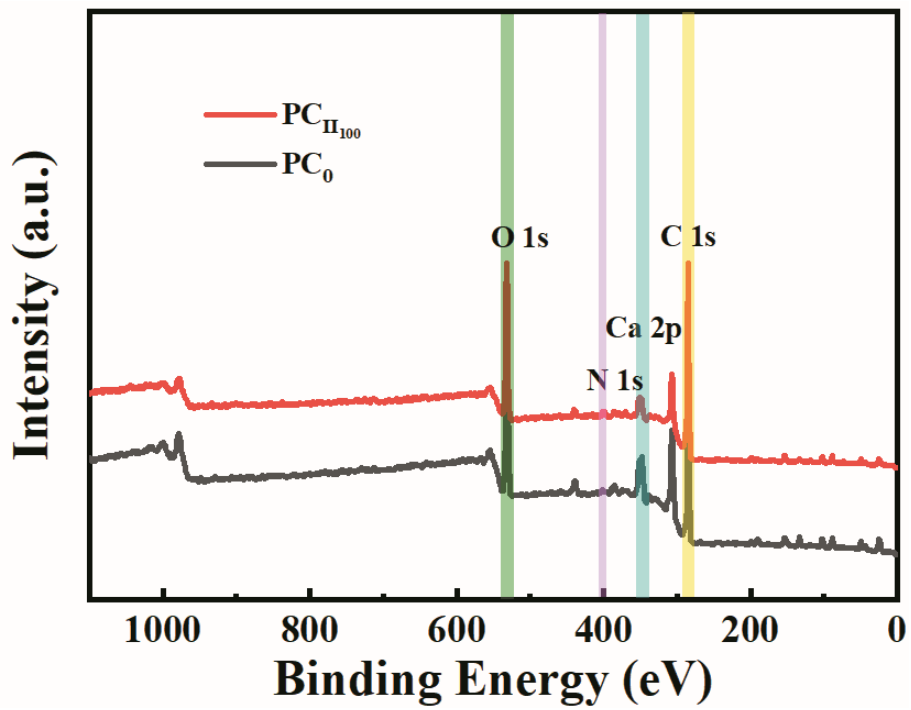

Figure S10 *XPS spectra of $PC_{II_{100}}$ and PC_0.*

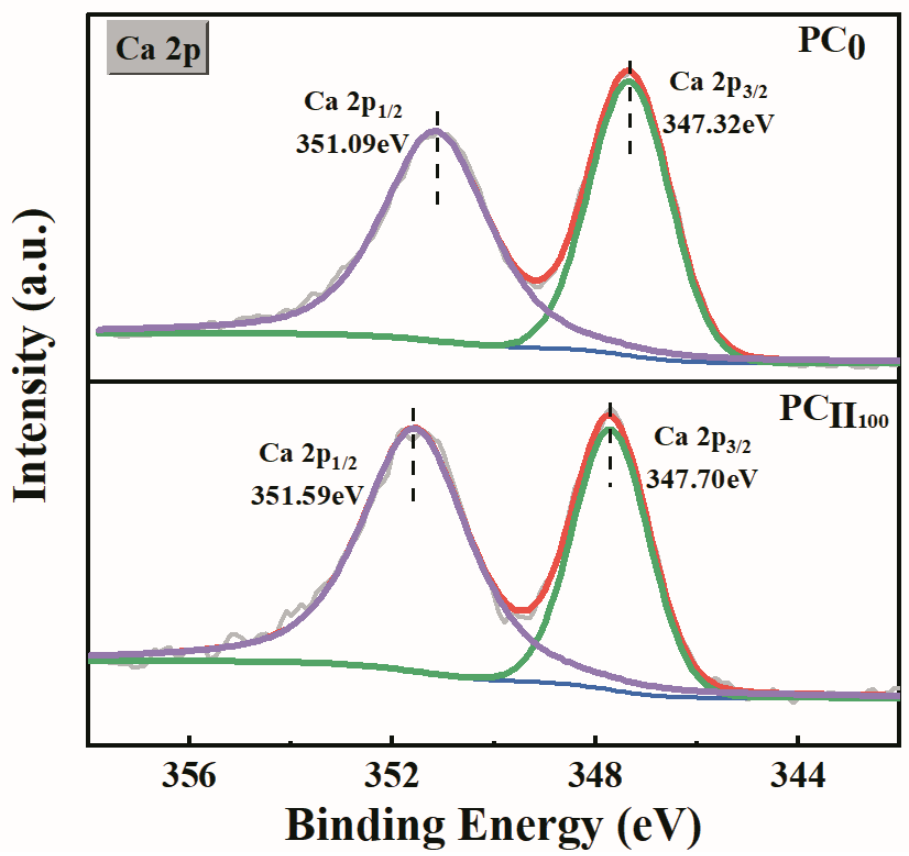

Figure S11 *High-resolution XPS spectra of Ca 2p.*

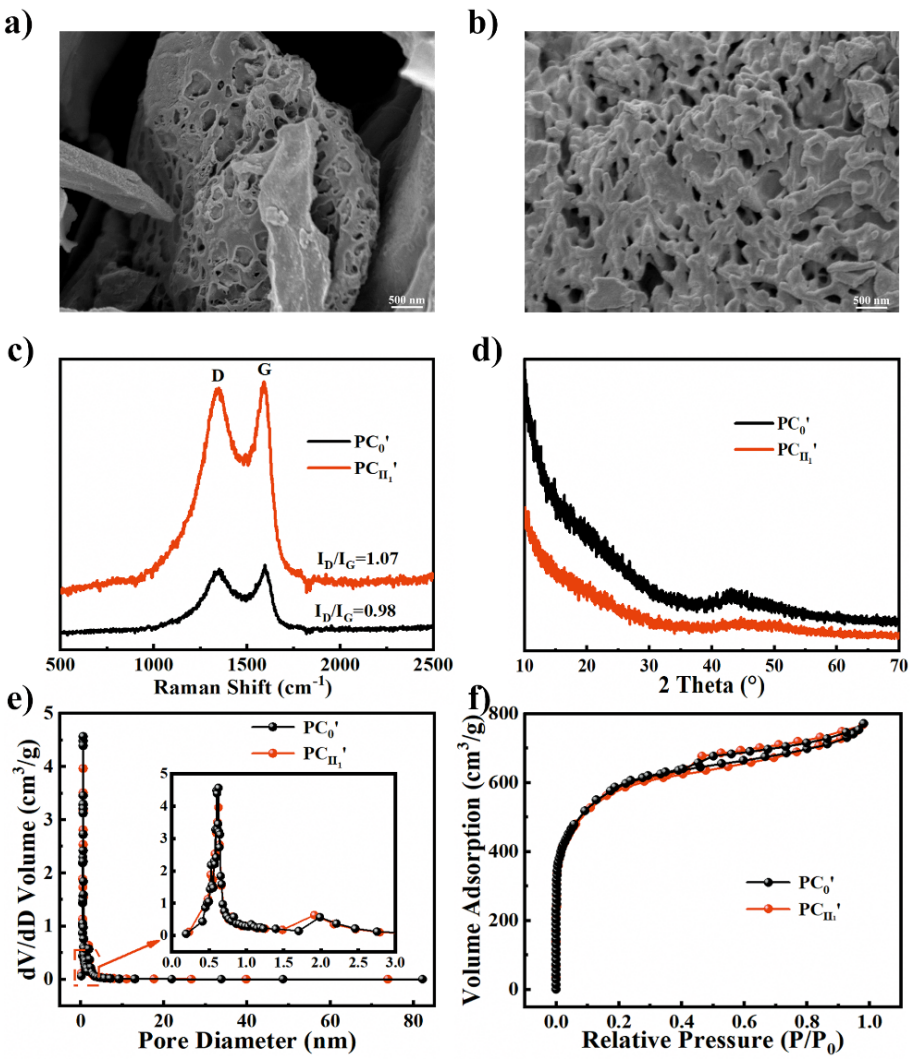

Figure S12 *SEM image of PC_0' a) and PC_{II_1}' b); c) Raman spectra; d) XRD patterns; e) pore size distribution curves; f) nitrogen adsorption-desorption isotherms.*

Table S1. *Pore structure parameters and specific surface area information of shoot samples*

Samples	S_{BET} (m^2/g)	S_{mic} (m^2/g)	V_{total} (cm^3/g)	V_{mic} (cm^3/g)	d (nm)	Micropore (%)	Mesopore& Macropore (%)
PC_0'	2078.182	1645.638	1.192	0.737	2.294	61.83	38.17
PC_{II_1}'	2020.279	1612.080	1.188	0.731	2.352	61.53	38.47

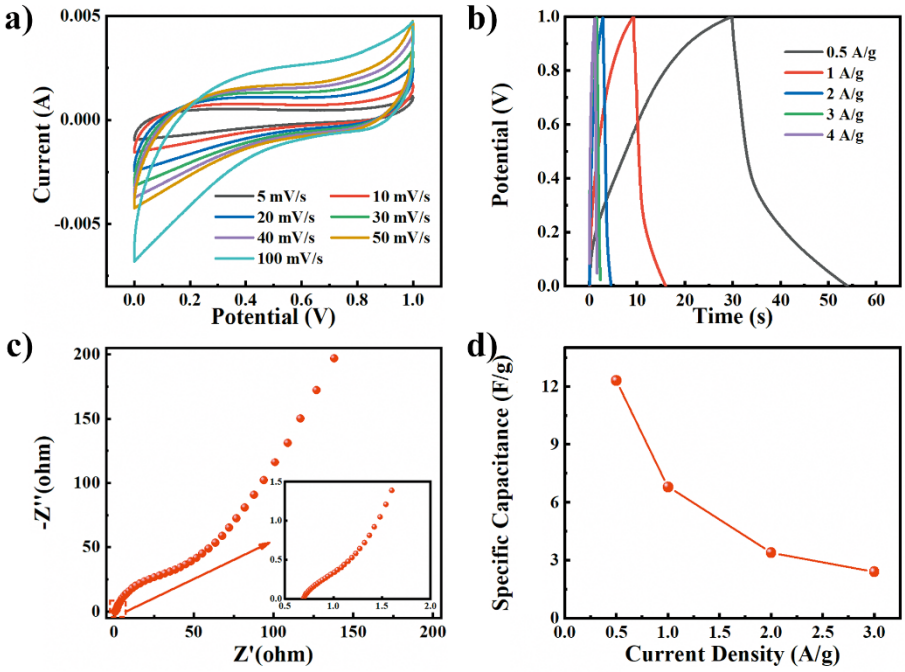

Figure S13 *Electrochemical properties of symmetric devices based on* $PC_{II_{100}}$*: a) CV; b) GCD; c) EIS, d) rate performance.*

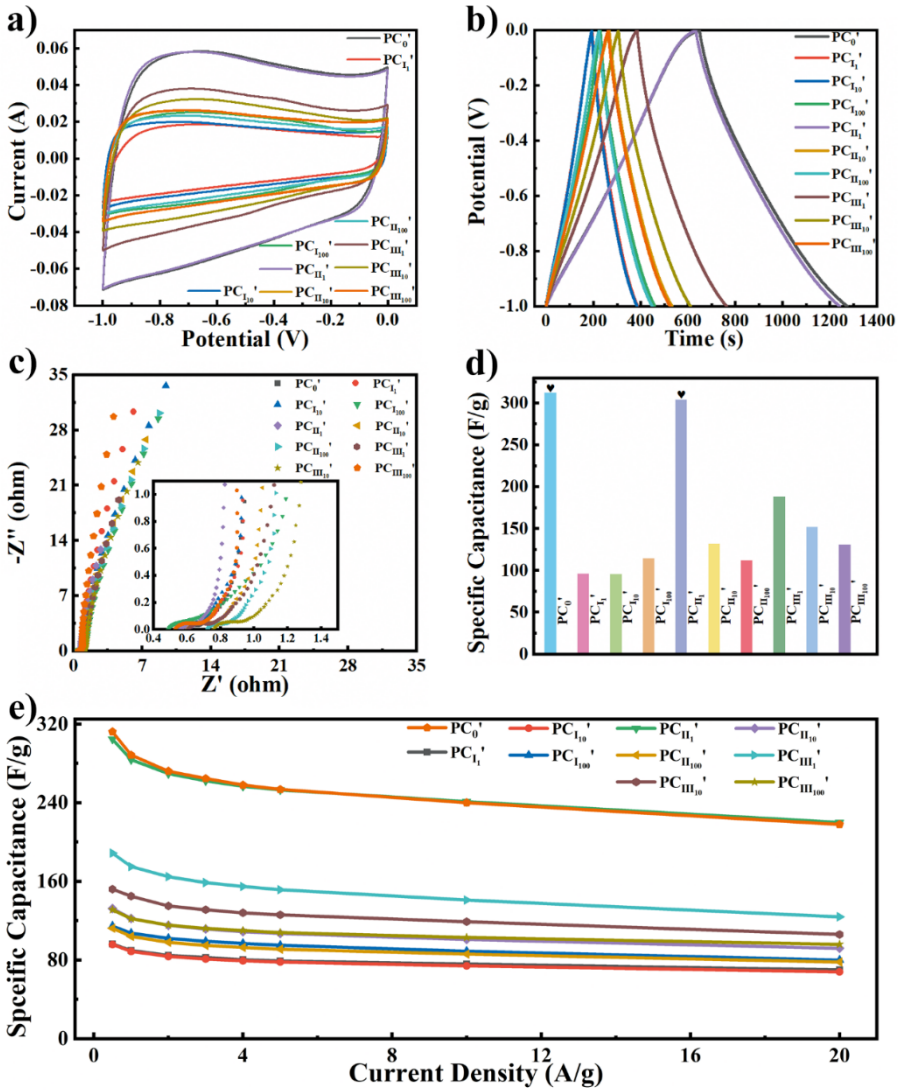

Figure S14 *Electrochemical properties of shoots: a) CV curves at 50 mV/s; b) GCD curves at 0.5 A/g; c) EIS spectra (inset: EIS spectra of high-frequency region); d) mass specific capacitance at 0.5 A/g and e) rate performance.*