Supporting Information

Investigation of the Mechanism of Small Size Effect in Carbon-based Supercapacitors

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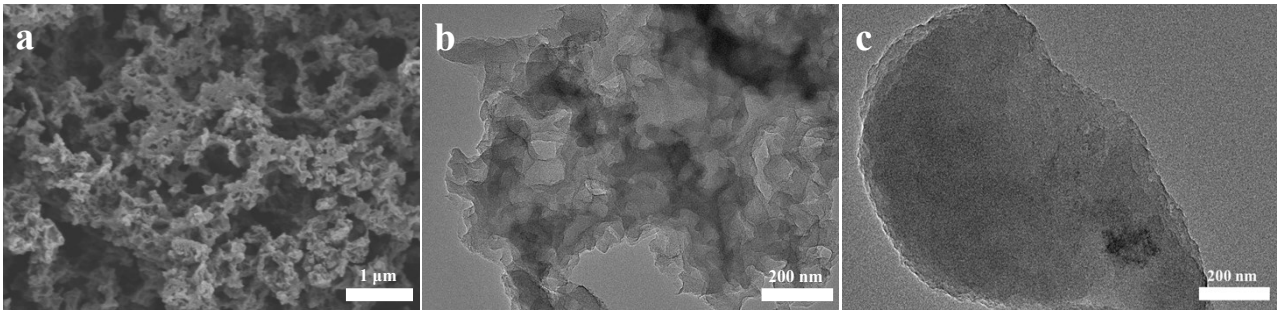

Figure S1. (a) The SEM image of PILMC after modification by ball-milling, (b) The TEM image of PILMC after modification by ball-milling, (c) The SEM image of internal features of PILM/PAN-L.

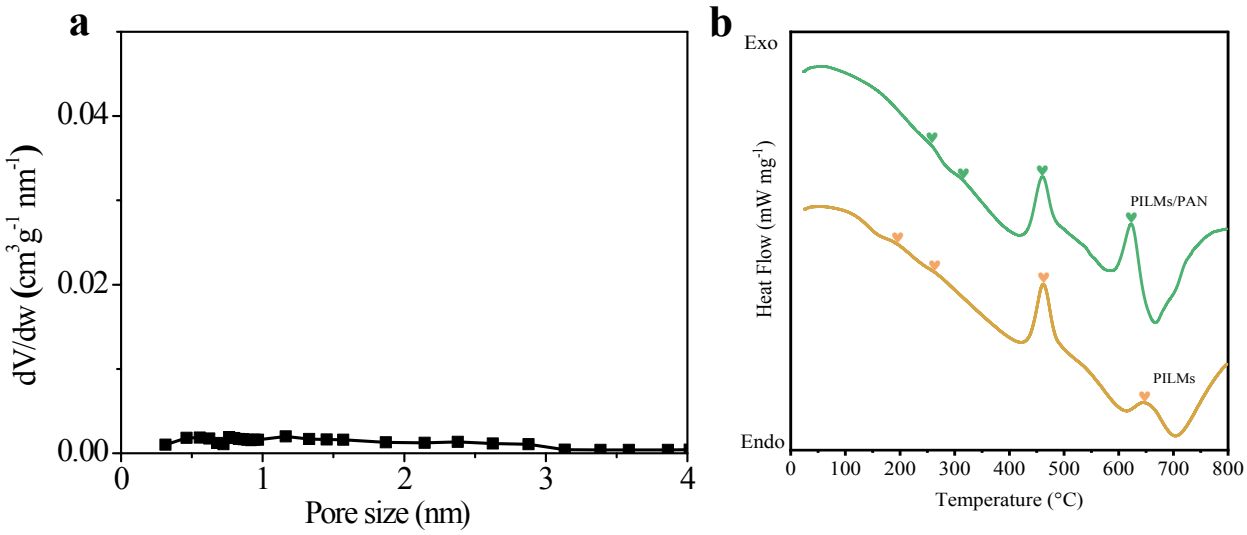

Figure S2. (a) Nitrogen adsorption-desorption isotherm of PAN-loaded PILMs by the stepwise method, (b) DSC curves of PILMs and PILMs/PAN.

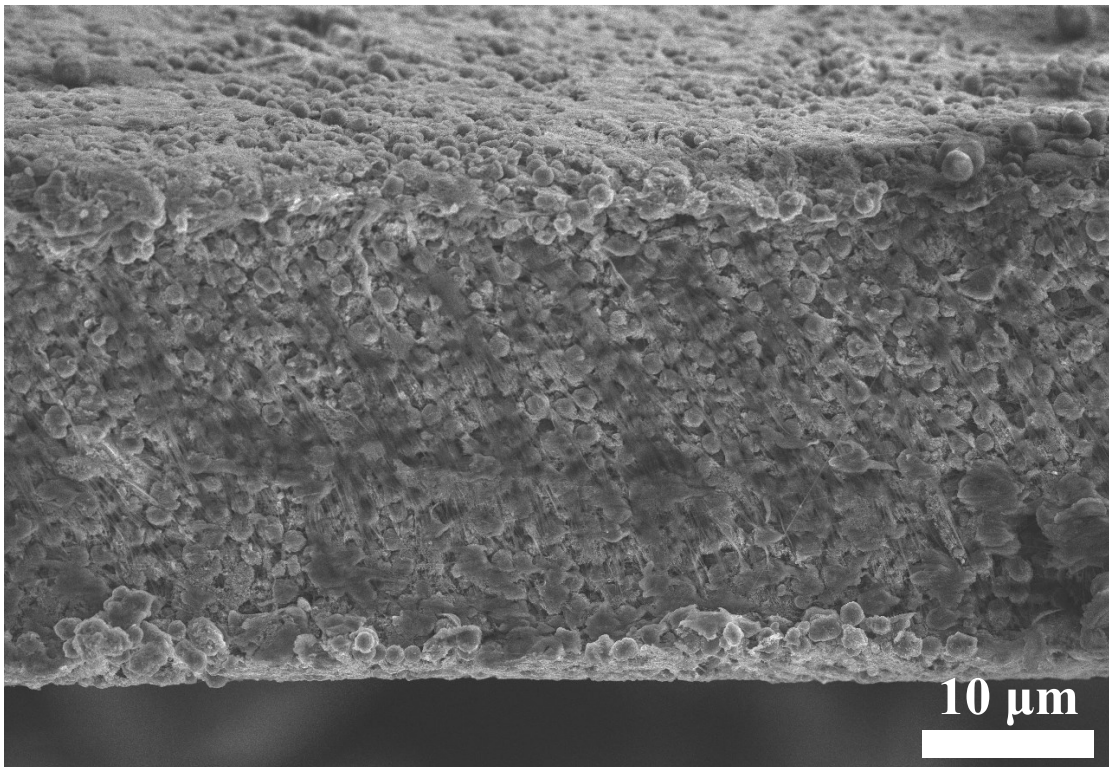

Figure S3. The cross-sectional SEM image of the carbon materials (PILMC/PAN-L) within the electrode.

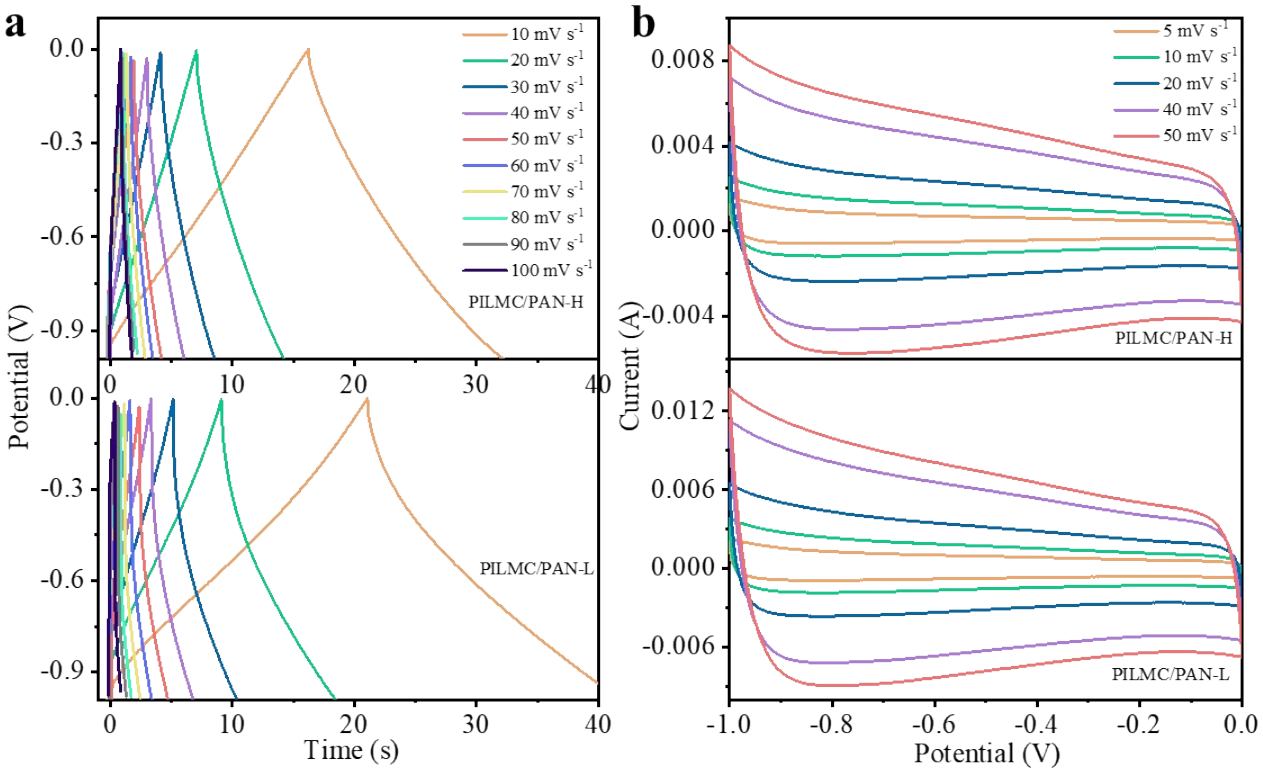

Figure S4. (a) CV curves of PILMCs/PAN-x, (b) GCD curves of PILMCs/PAN-x.

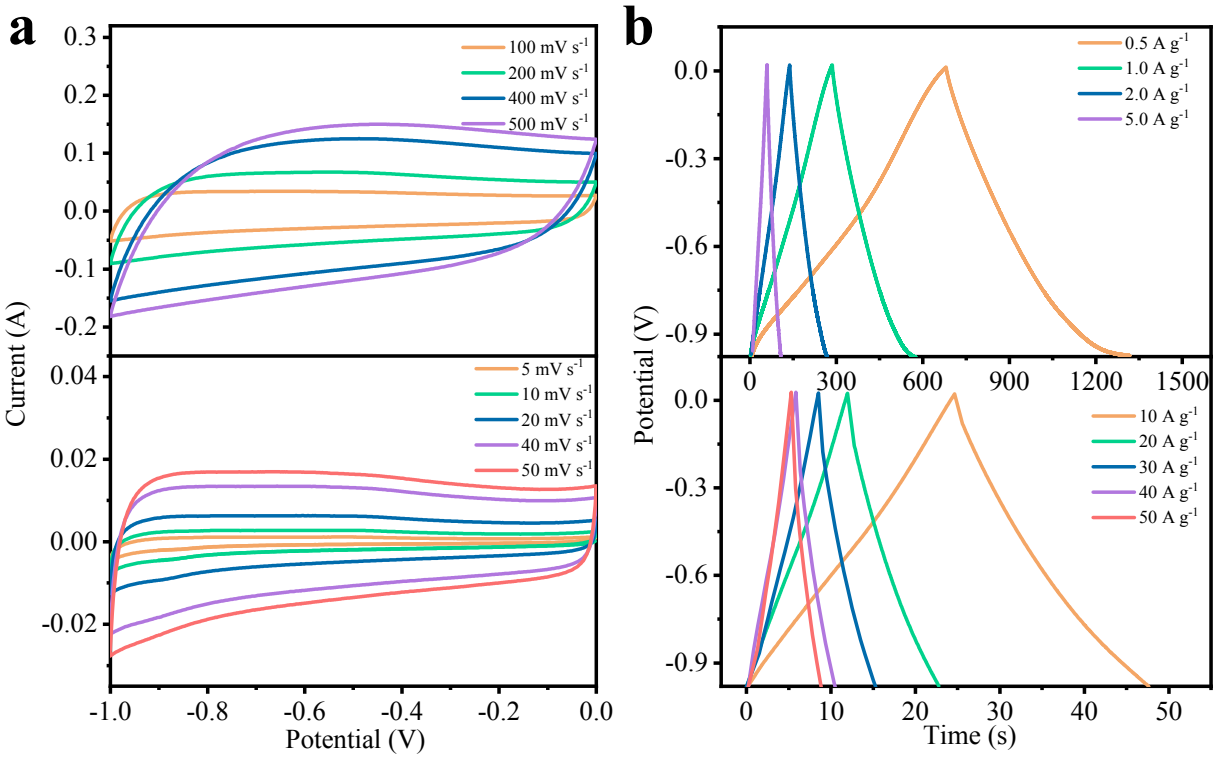

Figure S5. (a) CV curves of commercial activated carbon at different scan rates, (b) GCD curves of commercial activated carbon at different current densities.

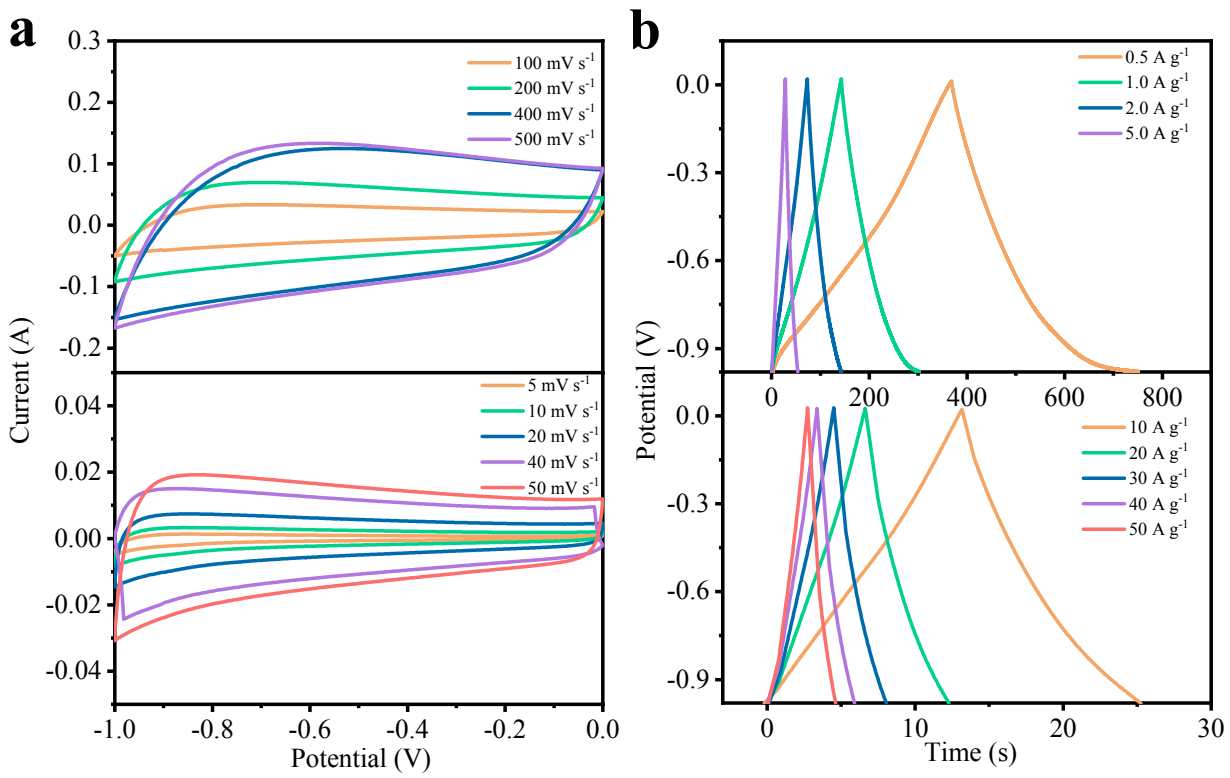

Figure S6. (a) CV curves of PILMC/PAN-L with mass loading of 5 mg cm^{-2} at different scan rates, (b) GCD curves of PILMC/PAN-L with mass loading of 5 mg cm^{-2} at different current densities.

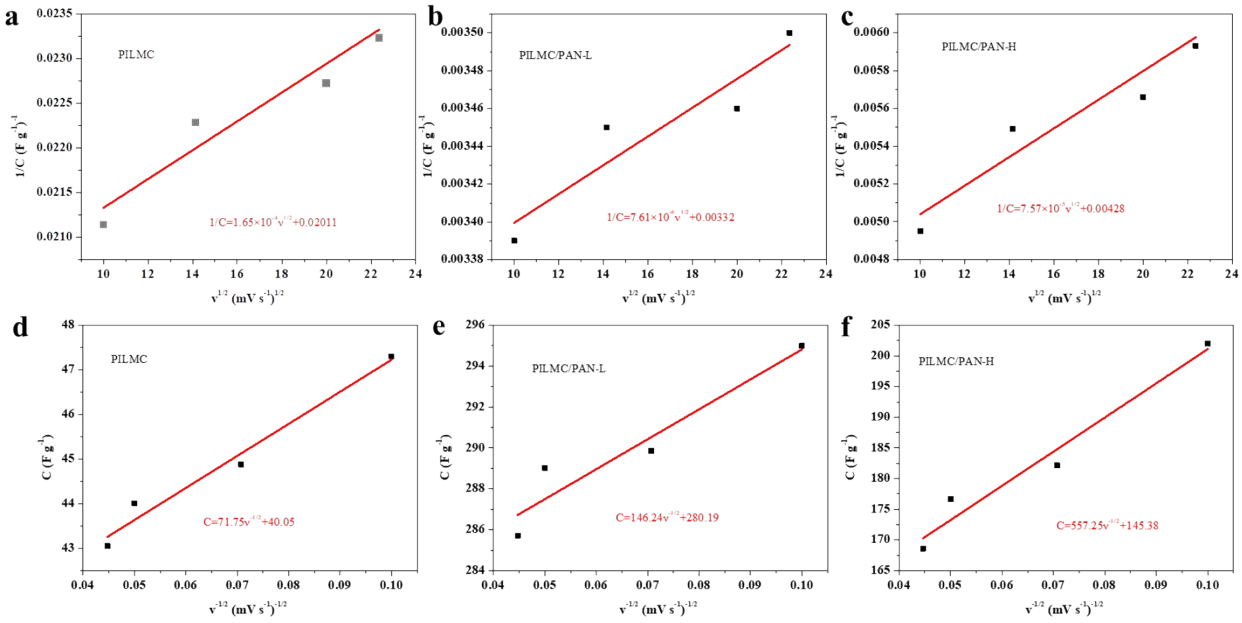

Figure S7. Plots of reciprocal of calculated gravimetric capacity (C^{-1}) vs. square root of scan rate ($v^{1/2}$) of the (a) PILMC, (b) PILMC/PAN-L, (c) PILMC/PAN-H; Plots of calculated gravimetric capacity (C) vs. reciprocal of square root of scan rate ($v^{-1/2}$) of the (d) PILMC, (e) PILMC/PAN-L, (f) PILMC/PAN-H.

Table S1 Elemental composition of PILMCs/PAN-x via XPS survey.

Element / Sample	C *(wt %)*	N *(wt %)*	O *(wt %)*	Br *(wt %)*
PILMC	89.55	2.21	7.59	0.65
PILMC/PAN-L	86.52	2.56	9.89	1.03
PILMC/PAN-H	85.70	6.08	7.58	0.64