Supporting Information

Non-Carbon Coating: A New Strategy for Improving Lithium Ion Storage of Carbon Matrix

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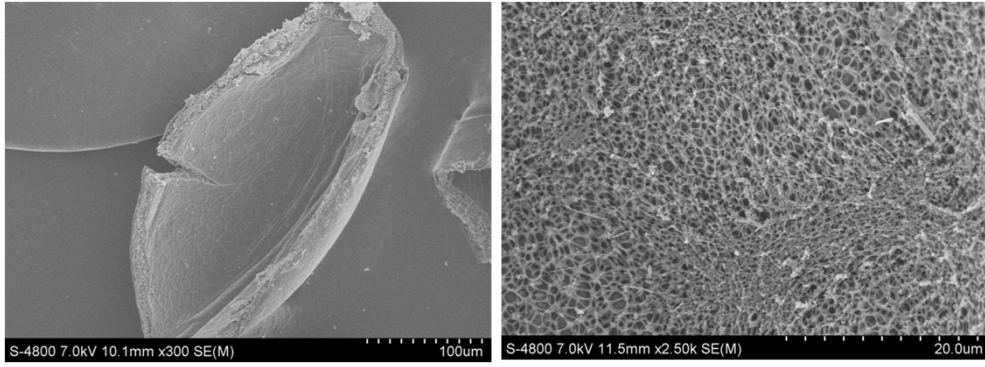
*Email: weiliu@ouc.edu.cn
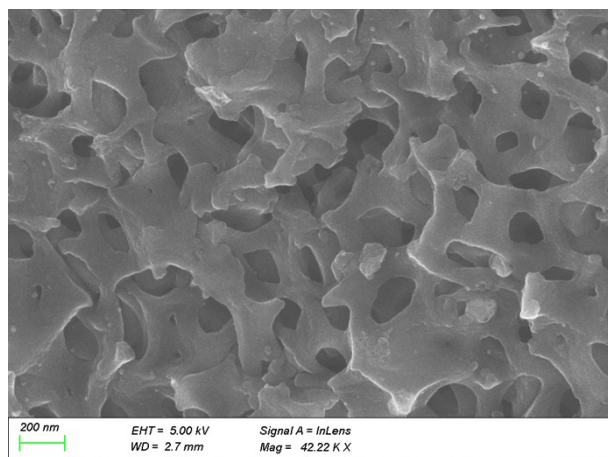
Figure. S1. SEM image of PBC

| 200 nm | EHT = 5.00 kV | Signal A = InLens |
| | WD = 2.7 mm | Mag = 42.22 K X |

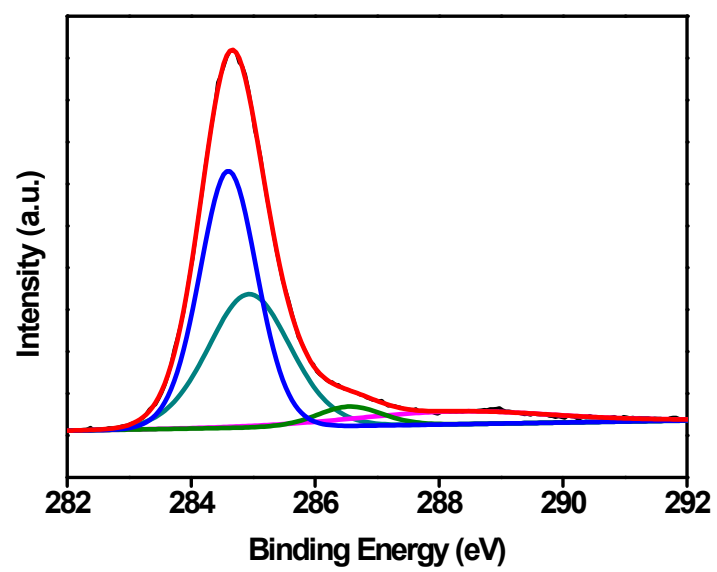**Figure. S2.** SEM image of PBC@TC sample

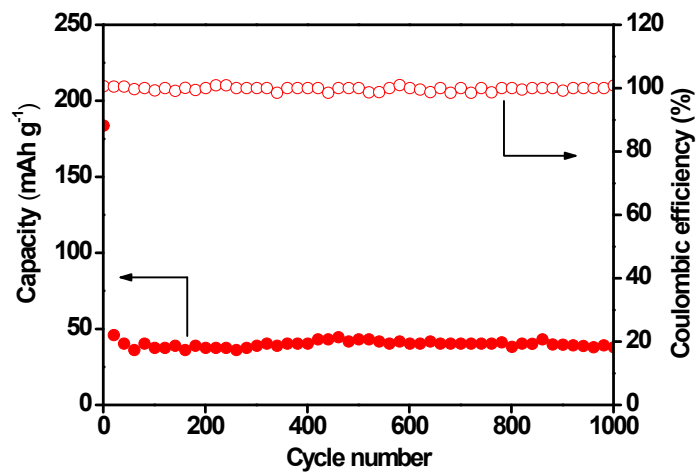**Figure. S3.** The high-resolution XPS C1s spectra of PBC@TC .

Figure. S4. The cycling performance and coulombic efficiency of TC at current density at 5 A g^{-1}.
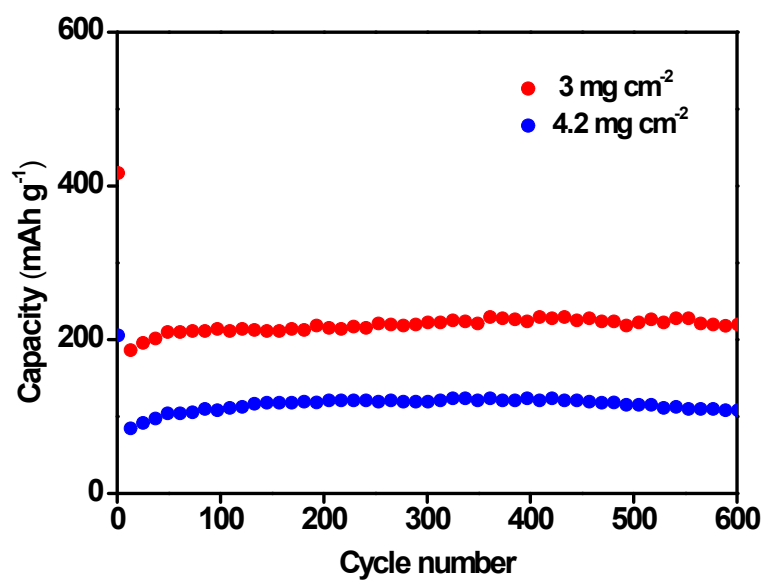
Figure. S5. The long-term cycle stability of the PBC@TC electrode at 5 A g^{-1} using different mass loadings of PBC@TC.
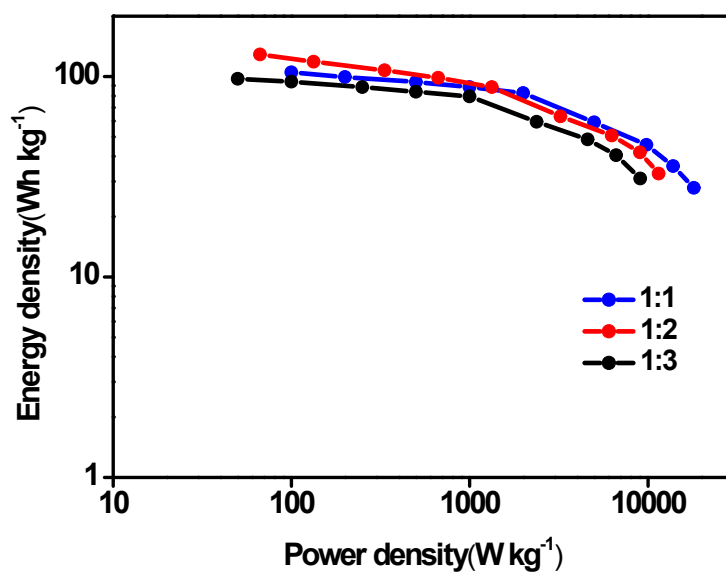
Figure. S6. Active mass normalized Ragone plots of AC//PBC@TC LICs based on total mass of the both cathode and anode tested between 0-4.0 V.
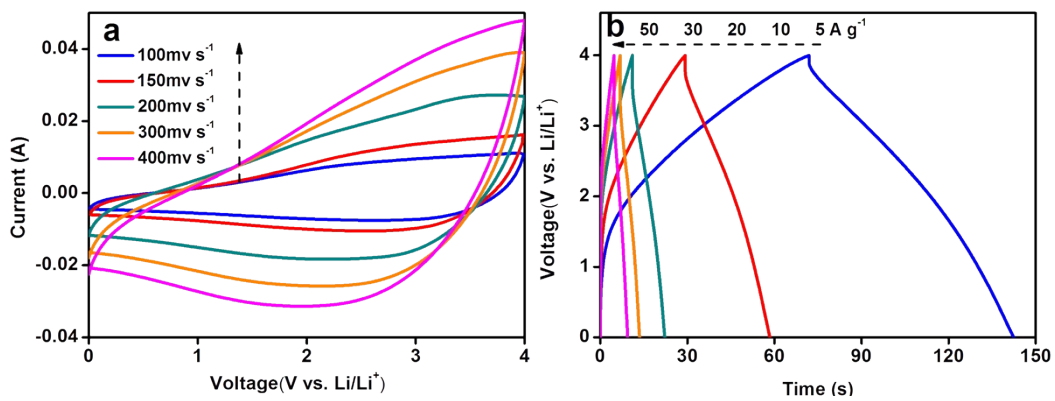
Figure. S7. (a) The CV curves of AC//PBC@TC LICs at various scan rates; (b) charge-discharge curves of AC//PBC@TC LICs at different current densities.

Table S1. Comparison with the performance of previously reported Li-ion capacitors

LIC	energy density (Wh kg^{-1})	power density (W kg^{-1})	ref
TiO$_2$-carbon //AC	27.5	5000	1
	67.4	75	
TiO$_2$@CNT@C //AC	81.2	126	2
TiC-carbon //AC	101.5	450	3
carbon //AC	83	128	4
	5718	41	
carbon nanosheets//AC	64.2	56.3	5
	25.8	1357	
Li$_4$Ti$_5$O$_{12}$/graphene//AC	50.3	225	6
	27.5	3000	
Li$_2$FeSiO$_4$// AC	43	200	7
TiO$_2$(reduced	42	800	8
graphene oxide) //AC	8.9	8000	9
GC1100/ /SFAC-2	104	143	10
	32	6628	
AC//PBC@TC	**132**	**66.6**	**This work**
	32.7	**11500**	

Notes and References

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