## **Supporting Information**

High yield and packing density activated carbon by one-step molecular level activation of hydrophilic pomelo peel for supercapacitors

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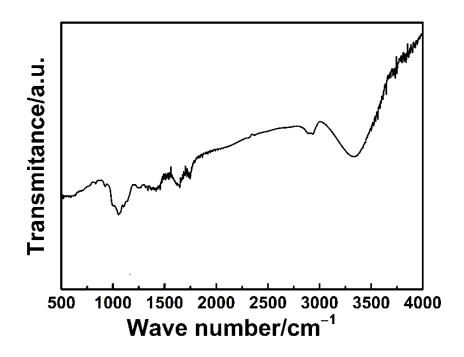


Figure S1. IR spectrum of pomelo peel.

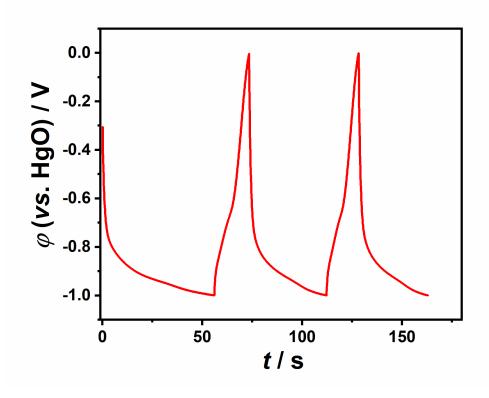


Figure S2. GCD curve of commercial Ni(OH)<sub>2</sub> at 1 A  $g^{-1}$ .

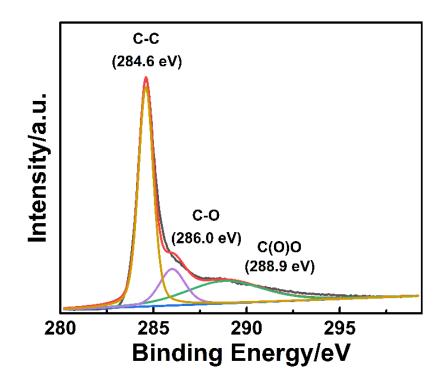


Figure S3. XPS spectrum of CAC-1.

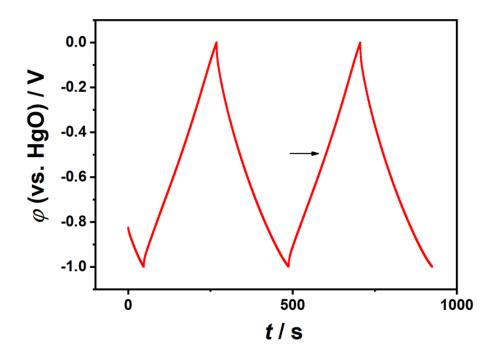


Figure S4. GCD curve of CAC-1 at 1 A  $g^{-1}$ .

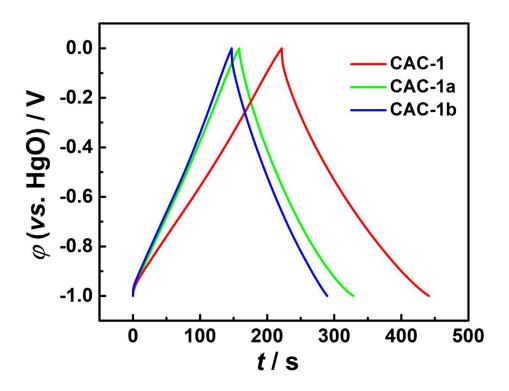


Figure S5. GCD curves of CAC-1, CAC-1a and CAC-1b at 1 A  $g^{-1}.$ 



Figure S6. Digital photo of CAC-1 electrode with PTFE binder.

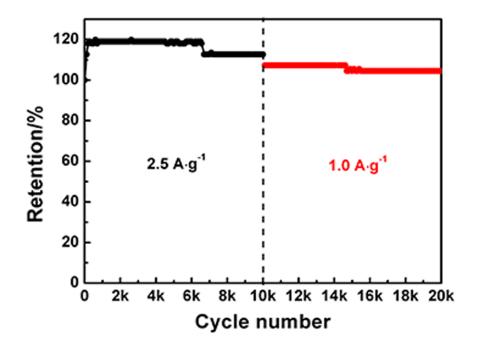


Figure S7. Cyclic performance of CAC-1 supercapacitor with thin electrodes at 2.5 and 1 A  $g^{-1}$ .

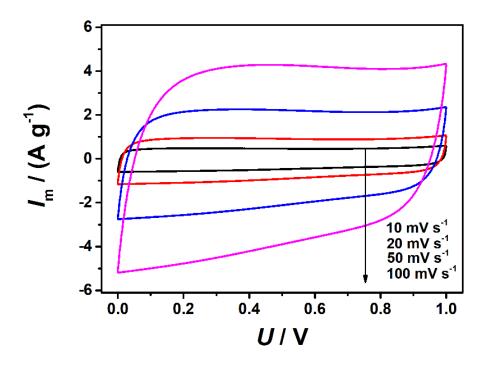


Figure S8. CVs of CAC-1 supercapacitor with thick electrodes in KOH electrolyte.

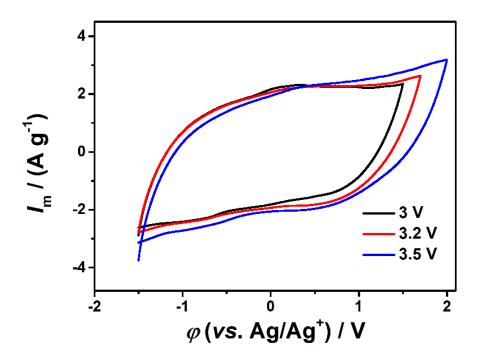


Figure S9. CVs of CAC-1 in EMIMBF<sub>4</sub> in three-electrode cell at  $10 \text{ mV s}^{-1}$ .

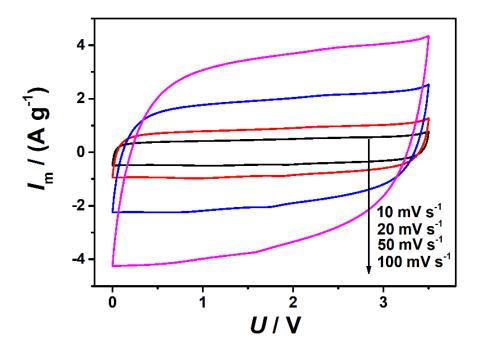


Figure S10. CVs of CAC-1 supercapacitor with thick electrodes in EMIMBF<sub>4</sub> with cell voltage of 3.5 V.

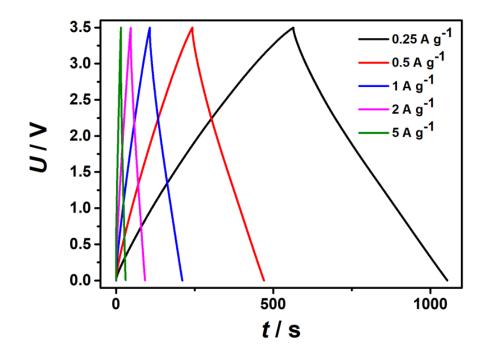


Figure S11. GCD curves of CAC-1 supercapacitor with thick electrodes in EMIMBF<sub>4</sub> with cell voltage of 3.5 V.

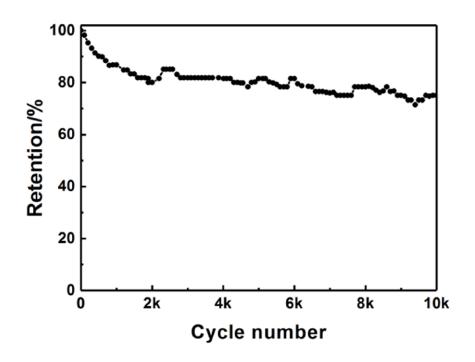


Figure S12. Cyclic performance of CAC-1 supercapacitor with thin electrodes in  $EMIMBF_4$  at 1 A g<sup>-1</sup> with cell voltage of 3.5 V.

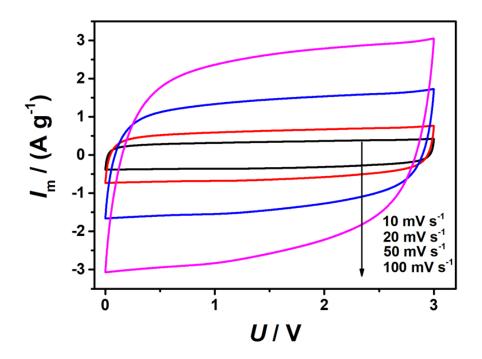


Figure S13. CVs of CAC-1 supercapacitor with thick electrodes in EMIMBF<sub>4</sub> with cell voltage of 3 V.