Hollow carbon microtubes from kapok fiber: structural evolution and energy storage performance

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Electronic Supplementary Information (ESI) available: SEM and TEM images, BET, XPS spectra, XRD patterns, electrochemical capacitive performances, and tables. See DOI: 10.1039/x0xx00000x

Supporting information

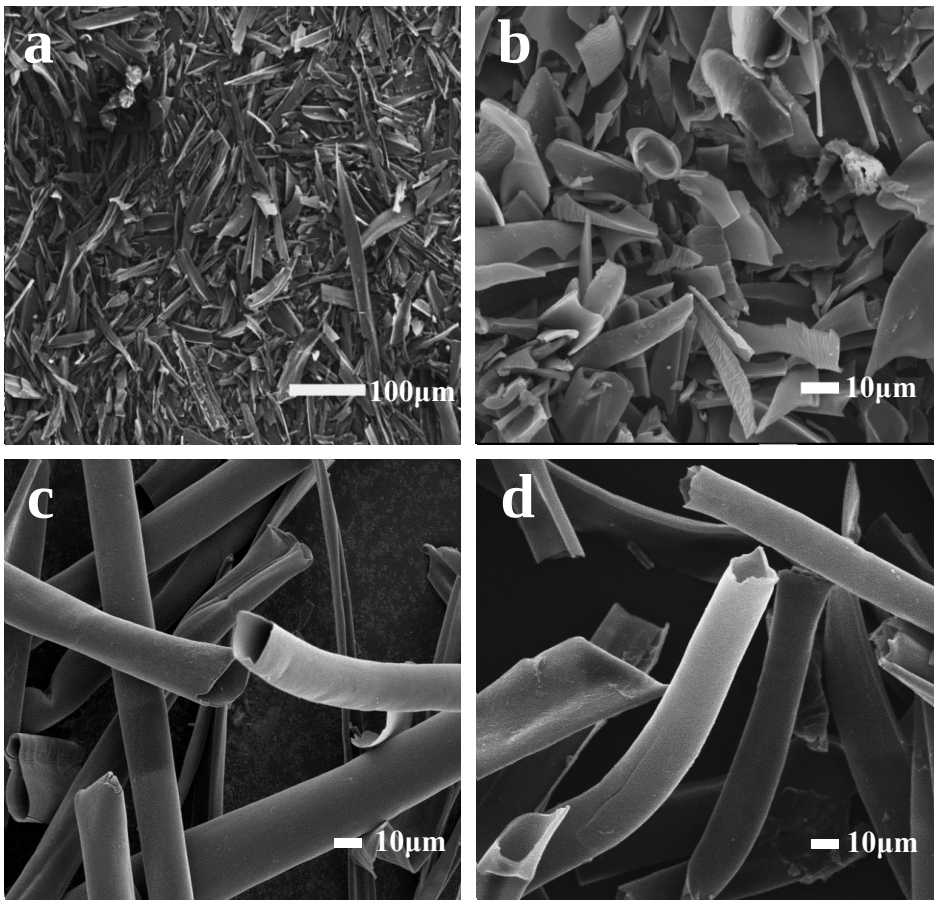

Figure S1.(a) SEM image of OKF; (b) SEM image of PKAC-650; (c) SEM image of HCMT-500; (d) SEM image of HCMT-700

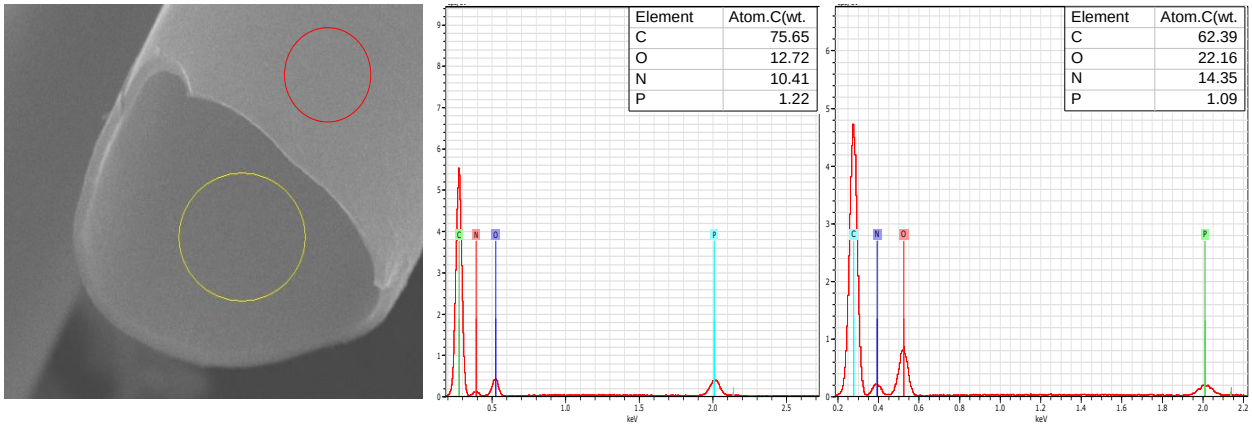

Figure S2.(a) SEM image of HCMT-650; (b) EDS analysis of inner surface of tube; (c) EDS analysis of outer surface of tube

As shown in Figure S2, we can find the content of Nitrogen and phosphorus is basically same inside and outside surface of tube wall, indicating the etching of $(NH_4)_2HPO_4$ also occurred on the surface both inner and outer wall.

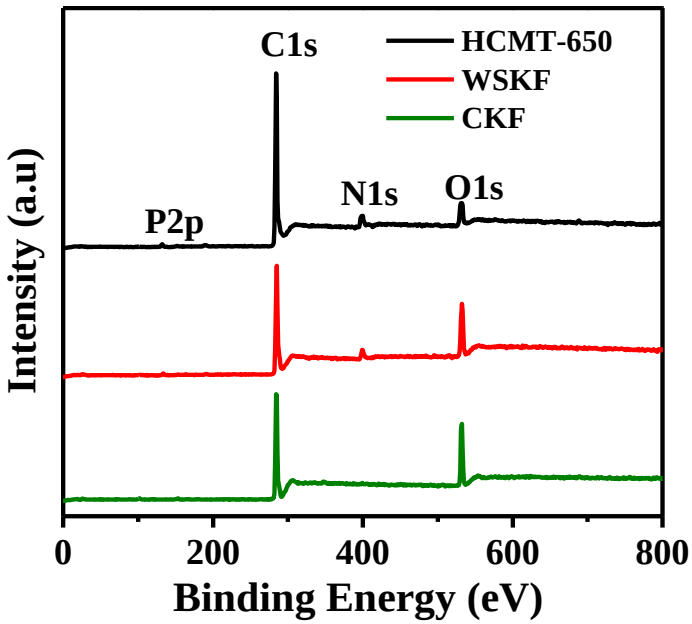

Figure S3.The survey spectra of CKF,SKF and HCMT-650

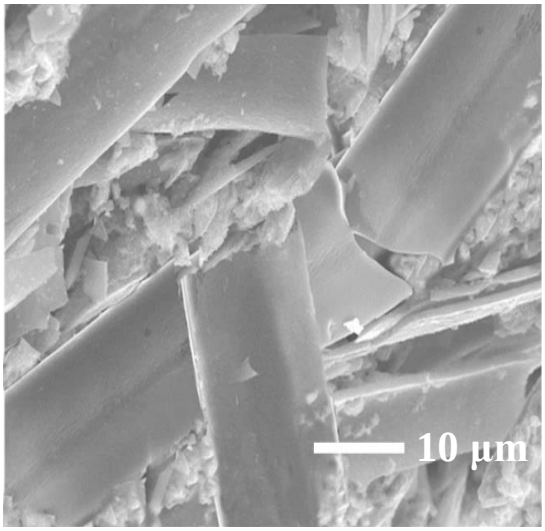

Figure S4.The SEM image of electrode

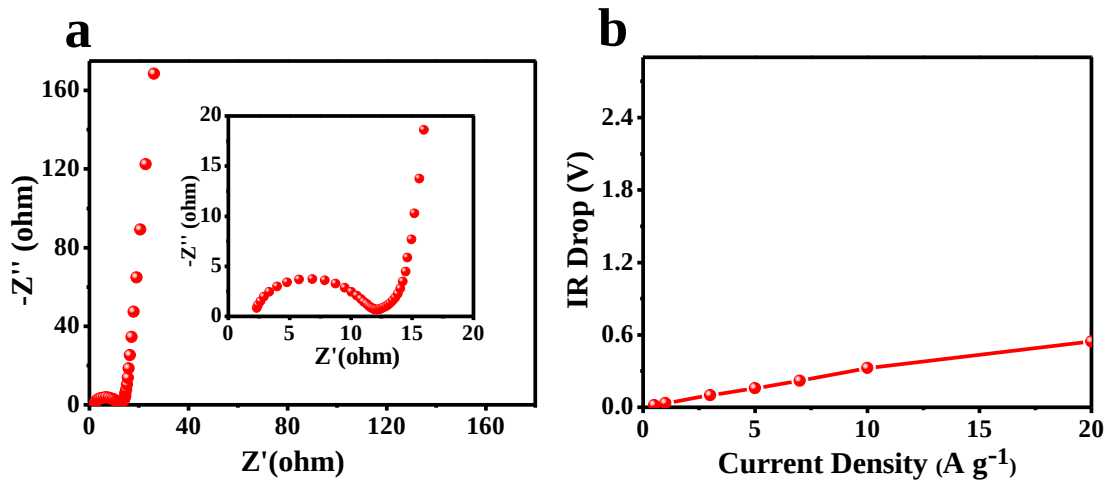

Figure S5.Electrochemical performance characteristics of HCMTs measured in a three-electrode system in the1 M TEABF4/PC electrolyte: (a) Nyquist plots of HCMT-650 in the frequency range from 10 kHz to 10 mHz (inset: magnified figure of arc part); (b) the internal voltage drop of HCMT-650 at different current density

As shown in Figure S5a, the large value of the first intersection with the real axis and semicircle signifies high transfer resistance in HCMT-650, which is related to the existence of numerous defects and heteroatom doping resulting in poor electric conductivity.