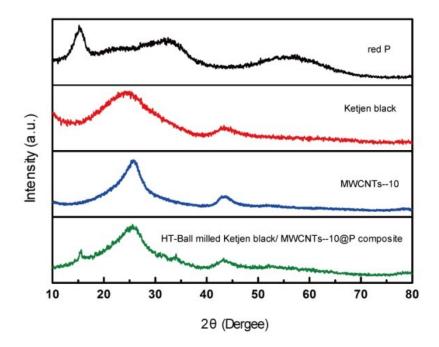
Electronic Supplementary Information for

## Improving the electrochemical properties of red P anode in Na-ion batteries via the space confinement of carbon nanopores

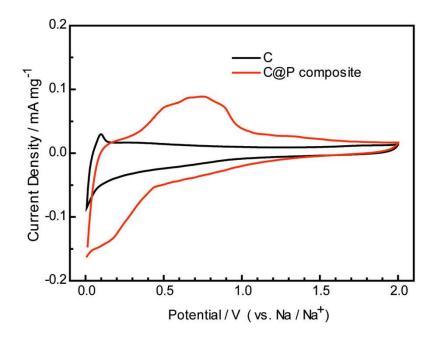
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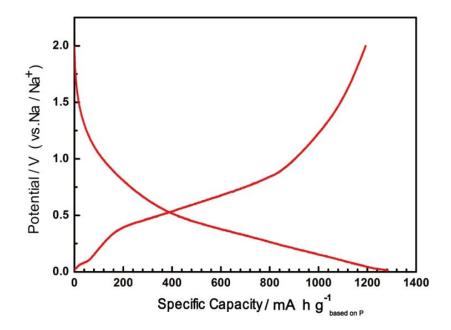
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*Figure S1.* The XRD pattern of the (black) commercially available red phosphorus , (red) ketjen black and (blue) multiwalled carbon nanotube (MWCNTs) and (green) hierarchical porous carbon @red phosphorus composite.



*Figure S2.* cyclic voltammograms (CVs) measured under a scan rate of 0.1 mV s<sup>-1</sup> of (red) HPC@P composite electrode and (black) HPC electrode in SIBs.



*Figure S3.* Charge-discharge characteristics (based on red P) of hierarchical porous carbon @red phosphorus composite electrode in sodium ion battery at a current density of 25 mA  $g^{-1}$