

Supporting Information

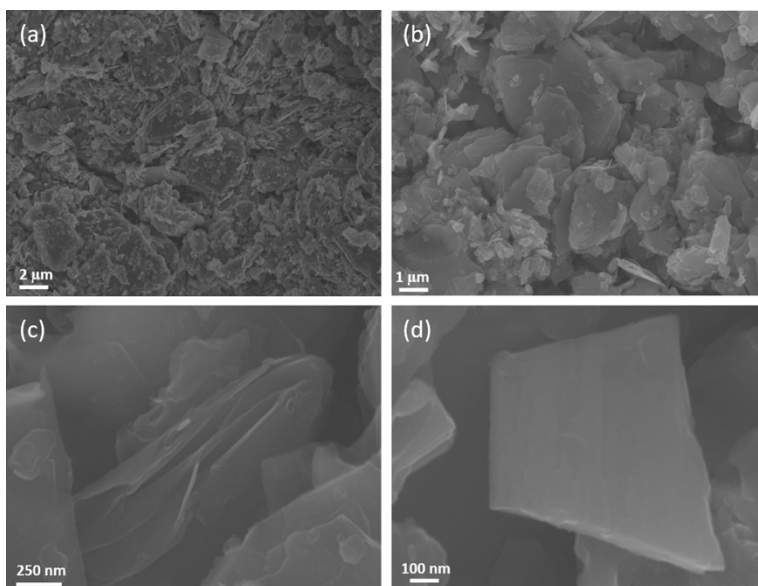


Fig. S1 SEM images of the black phosphorus nanosheets after tip sonic.

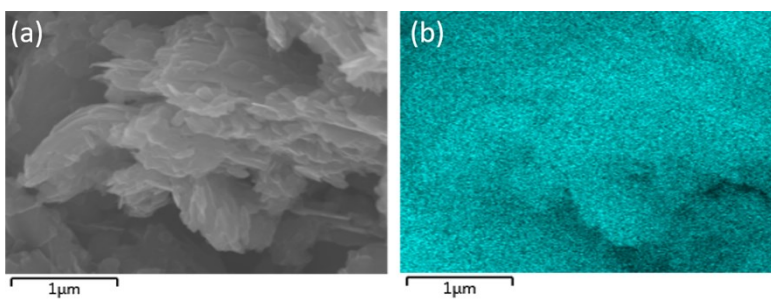


Fig. S2 (a) SEM image of the BP nanosheet after tip sonic, and (b) corresponding elemental mapping of phosphorus.

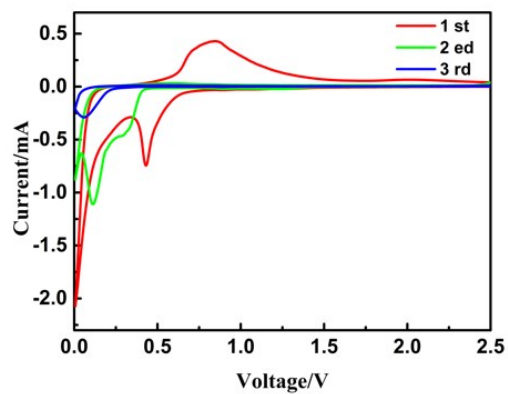


Fig. S3 Cyclic voltammograms of the first, second, and third cycle of the black P/KB/CMC electrode scanned at a rate of $50 \mu\text{V}\cdot\text{s}^{-1}$.

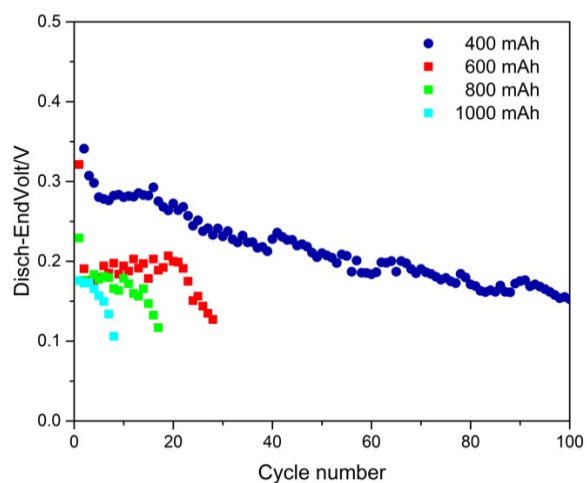


Fig. S4 The discharge cut-off voltage (Disch-EndV) evolution when the discharge specific capacity is limited to $400 \text{ mAh}\cdot\text{g}^{-1}$, $600 \text{ mAh}\cdot\text{g}^{-1}$, $800 \text{ mAh}\cdot\text{g}^{-1}$, and $1000 \text{ mAh}\cdot\text{g}^{-1}$.

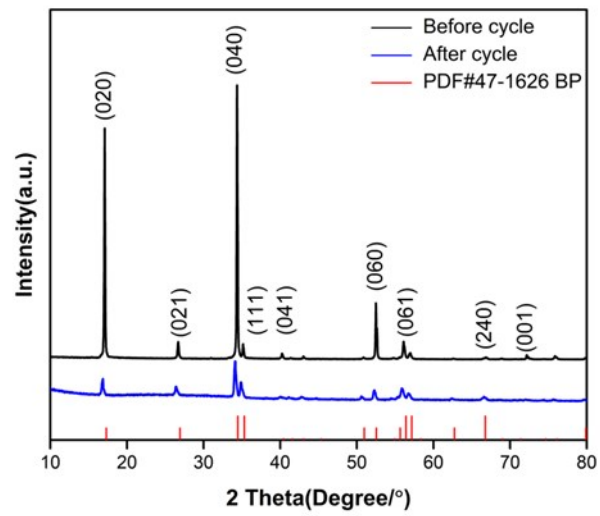


Fig. S5 The XRD patterns of black phosphorus before cycling and after cycling when the discharge specific capacity is limited to $400 \text{ mAh}\cdot\text{g}^{-1}$.