Supporting Information for

Nanostructured CuP$_2$/C Composites as High-Performance Anode Materials for Sodium Ion Batteries

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Figure S1. XRD pattern of Cu$_3$P prepared with a starting Cu to P ratio of 3 using HEBM.
Figure S2. (a) Cu 2p, (b) P 2p and (c) C 1s XPS spectra of pure CuP$_2$ and CuP$_2$/C composites.

Figure S3. SEM images of (a) Cu and (b) P precursor powders for HEBM.

Figure S4. XRD patterns of electrode materials in different charge and discharge states in comparison with the initial state.
**Figure S5.** TEM images of electrode materials at (a,b) the fully discharged state and (c,d) the fully charged state.

**Figure S6.** Rate capability of CuP$_2$/C electrode materials under fixed discharge current density (50 mA/g) and varying charge current densities as indicated.
Figure S7. Electrochemical impedance spectroscopy (EIS) analysis of CuP$_2$ and CuP$_2$/C at both the as-assembled state and the 1st recharge back to 2.5 V.

Figure S8. Cycling performances of CuP$_2$/C composites with different CuP$_2$ to carbon black ratios.
Figure S9. (a) Long-term cycling performance of CuP$_2$/C composites; (b) SEM image, (c) STEM image and (d-f) corresponding EDS elemental mapping of the electrode material after 70 charge/discharge cycles.