Supporting Information

## Enhanced sodium ion storage in Prussian blue cathode material through nickel doping

Haoyu Fu,<sup>ab</sup> Chaofeng Liu,<sup>abc</sup> Changkun Zhang,<sup>ab</sup> Wenda Ma,<sup>ab</sup> Kan Wang,<sup>ab</sup> Zhuoyu Li,<sup>ab</sup> Xianmao Lu,<sup>\*ab</sup> Guozhong Cao<sup>\*abc</sup>

<sup>a</sup> Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing, 100083, China;

<sup>b</sup> National center for Nanoscience and Technology (NCNST), Beijing, 100083, China;

<sup>c</sup> Department of Materials Science and Engineering, University of Washington, Seattle, WA 98195-2120, USA



**Figure S1.** TGA/DSC results of (a) PBA-0, (b) PBA-1, (c) PBA-3, (d) PBA-5, and (e) PBA-10 tested between 80 and 350 °C at a heat rate of 10 °C/min in Ar flow; (f) XRD pattern of PBA-0 powder heated in air at 250 °C for 1h.



**Figure S2.** STEM images and EDS mappings of PBA-1, PBA-5 and PBA-10. The EDS mappings confirm the uniform distribution of Ni of the as-prepared material.



Figure S3. EDS spectra of (a)PBA-0, (b) PBA-1, (c) PBA-3, (d) PBA-5 and (e) PBA-10. The



inset of each figure shows the STEM image of the selected spot or area.

**Figure S4.** Capacity contribution from high spin Fe ions (HS-Fe) and low spin Fe ions (LS-Fe) during galvanostatic tests at 10 mA/g. The red part of each column indicates the capacitance contribution of high spin  $Fe^{2+}N_6/Fe^{3+}N_6$  redox couple while the black part is due to the low spin  $Fe^{2+}C_6/Fe^{3+}C_6$  redox couple.



**Figure S5.** Galvanostatic curves tested at 10 mA/g for PBA-0 mixed with 3 molar% of NiFe-PBA and PBA-3.



**Figure S6.** Galvanostatic curves of (a) PBA-0, (b) PBA-1, (c) PBA-5 and (d) PBA-10 at various current densities.



Figure S7. XRD of all samples before and after cycling tests.



**Figure S8.** EIS spectra of all samples: (a) before cyclic test; (b) after 1st cycle at a current density of 10 mA/g, and consecutively (c) after 10 cycles at a current density of 200 mA/g.