Supporting Information

A 3.4 V Layered VOPO₄ Cathode for Na-ion Batteries

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Figure S1 XRD patterns of the VOPO₄ heated in Ar and air. *: (VO)₂P₂O₇, #: (VO)(PO₃)₂, +: α₁₁-VOPO₄.
**Figure S2** Digital images of the products formed during the chemical sodiation process. The letters “s” and “r” represent “stir” and “rest”, respectively.
Figure S3 Digital image of the chemically sodiated $\beta$-VOPO$_4$ after 90 min. The VOPO$_4$ and NaI concentrations were the same as in Figure S1, but the I$_2$ color is much lighter here, even after much longer reaction time. It suggests that the insertion of sodium into the $\beta$ form is more difficult.
Figure S4 The initial charge-discharge profile of the VOPO$_4$ cathode at C/20 rate. The large irreversible capacity possibly originates from the extraction of protons that was introduced during the delithiation process.
Figure S5 charge-discharge profiles of the VOPO$_4$ electrodes on the 2$^{\text{nd}}$ cycle, showing the higher overpotentials with increasing current rates.
Figure S6 SEM image of the VOPO$_4$/rGO composite, showing that the morphology of the particles is maintained after the delithiation process.