Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Electronic Supplementary Information

Flexible Additive-free $H_2V_3O_8$ Nanowire Membrane as Cathode for Sodium Ion Batteries

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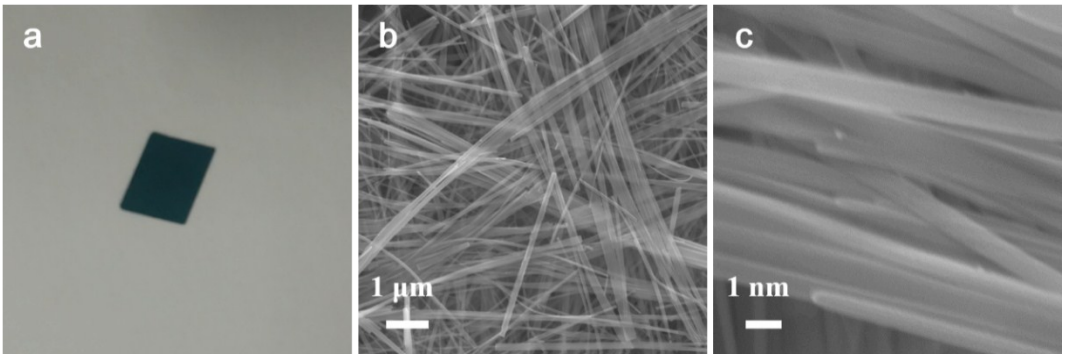

Fig. S1 The optical photograph (a), SEM image (b) and HRSEM image (c) of the $H_2V_3O_8$ nanowire membrane after 100 cycles.

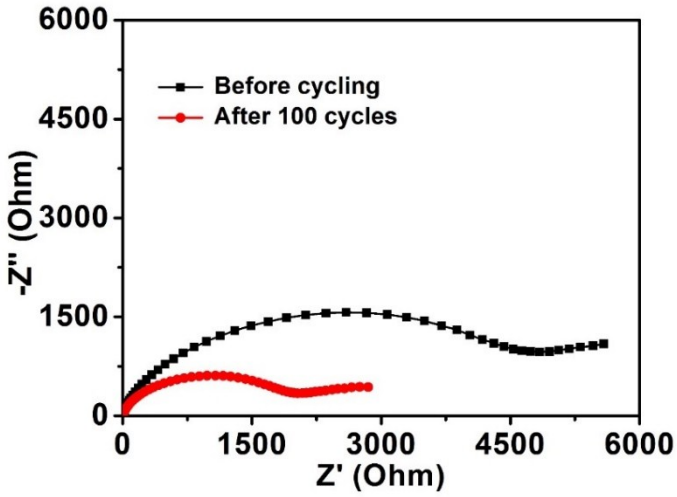

Fig. S2 The Nyquist plots of the $H_2V_3O_8$ nanowire membrane before cycling and after 100 cycles, respectively.

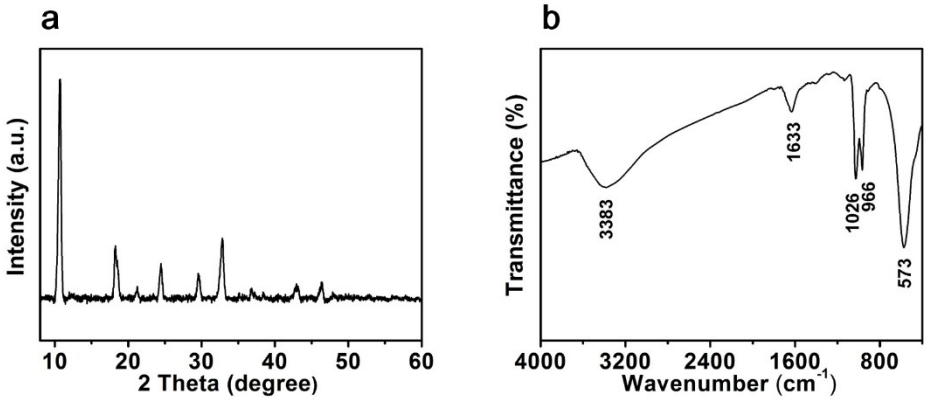

Fig. S3 The XRD pattern (a) and FTIR spectrum (b) of $H_2V_3O_8$ nanowire membrane after 280 cycles.

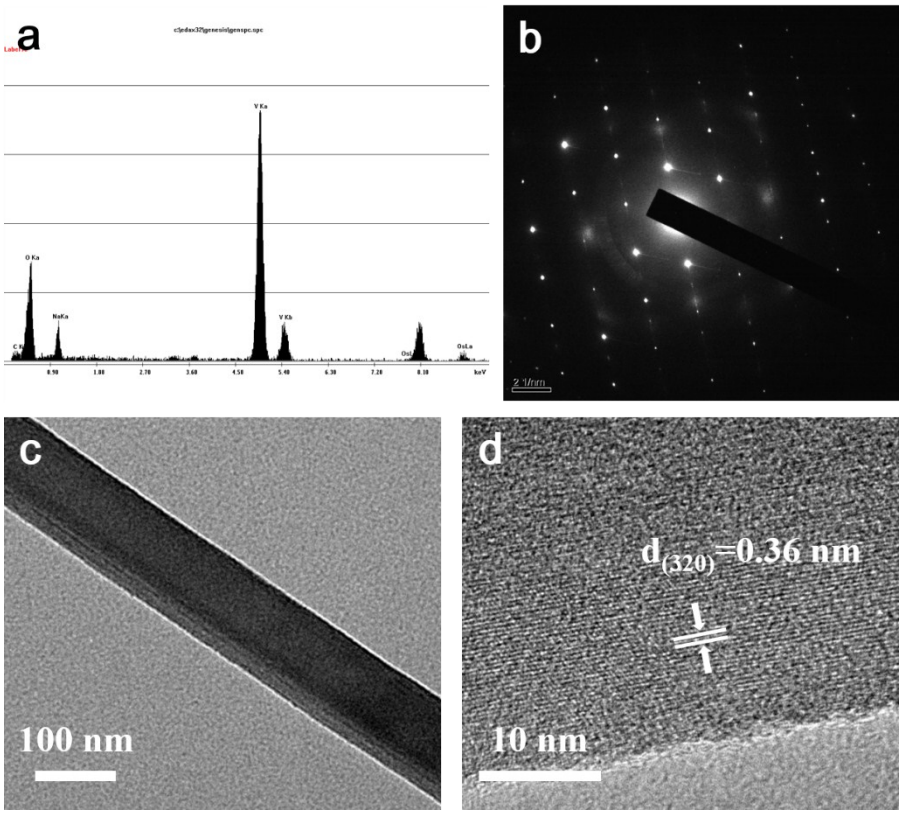

Fig. S4 EDX spectrum (a), SAED pattern (b), TEM (c) and HRTEM (d) images of the $H_2V_3O_8$ nanowire membrane discharged to 1.5 V.

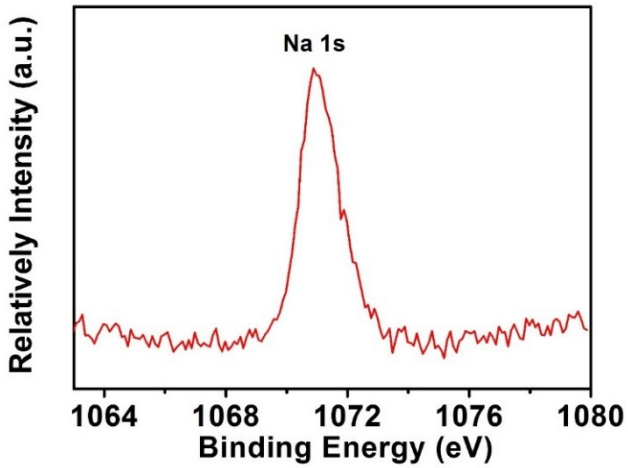

Fig. S5 High-resolution XPS spectrum of Na 1s of the $H_2V_3O_8$ nanowire membrane discharged to 1.5 V.

Equation S1

$$C = \frac{\frac{1}{3.6} \times \mathrm{n} \times F}{M}$$

C ---- Specific capacity;

n ---- Transfer electronic number in a molecular;

F ---- Faraday constant;

M ---- The molecular weight