Electronic Supplementary Information

A novel hierarchical book-like structured sodium manganite for high-stable sodium-ion batteries

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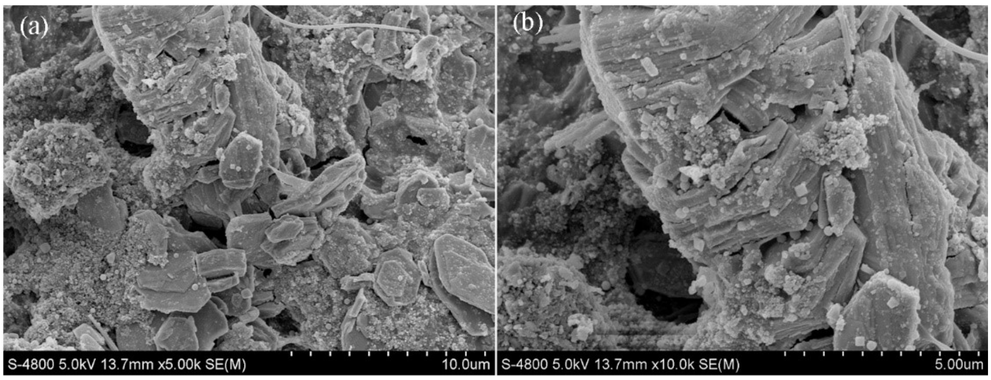

Fig. S1. (a, b) SEM images of P2-$Na_{0.7}MnO_{2.05}$ sample after 100 cycles at 1 C.

The Na^+ diffusion coefficient (D) can be calculated from the plots in the low frequency region based on the following two equations:

$$D = R^2T^2/2A^2n^4F^4C^2\sigma^2 \quad (1)$$

$$Z' = \sigma\omega^{-0.5} + R_s + R_{ct} \quad (2)$$

where, R is the universal gas constant, T is the absolute temperature, n is the number of electrons participating in the electrochemical reaction, A is the surface area of the electrode, F is the Faraday constant, C is the molar concentration of Na^+, and σ is the Warburg coefficient, Z' is the real part of the EIS, Rs is the resistance between the electrolyte and electrode, and ω is the angular frequency in the low frequency region.

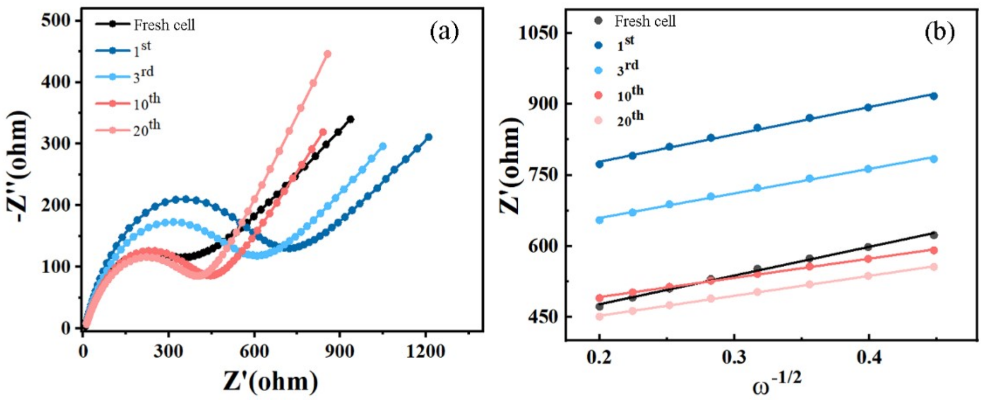

Fig. S2. (a) Nyquist plots and (b) the plots of impedance as a function of the inverse square root of angular frequency in the Warburg region for the P2-$Na_{0.7}MnO_{2.05}$ at various cycling intervals.