Supporting Information

Superior Sodium Storage Performance of Additive-Free V_2O_5 Thin Film Electrode

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KEYWORDS: Sodium ion batteries, cathode materials, vanadium pentoxide, thin film electrode

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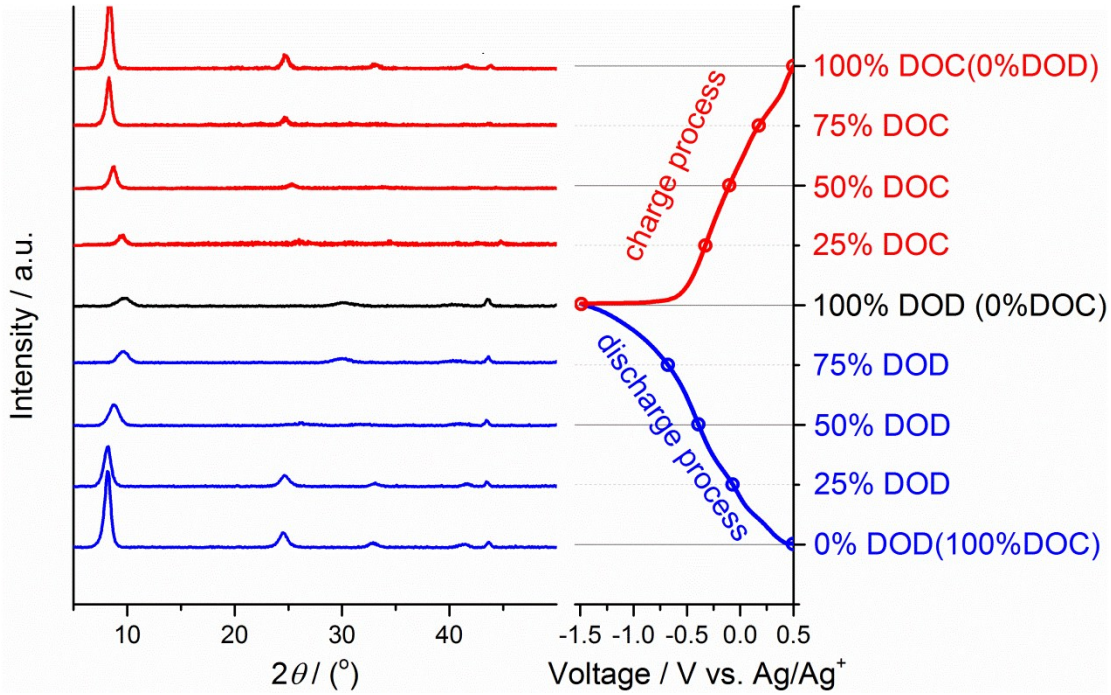

Fig. S1 *Ex-situ* XRD patterns of the V_2O_5 film electrodes collected at various discharge/charge states in the 10th cycle.

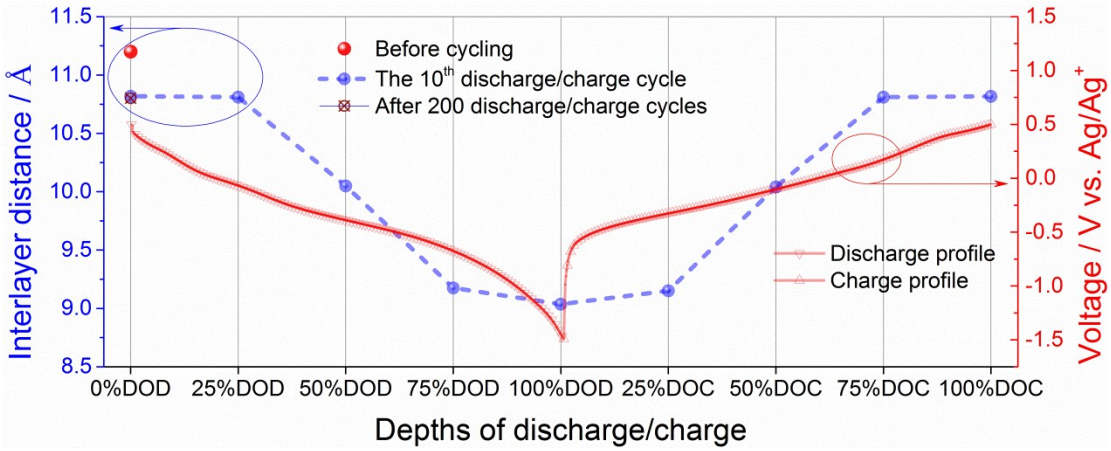

Fig. S2 The evolution of interlayer distance of the V_2O_5 film at various discharge/charge states in the 10th cycle. Note the mirror image between the discharge (insertion) and charge (extraction) process.

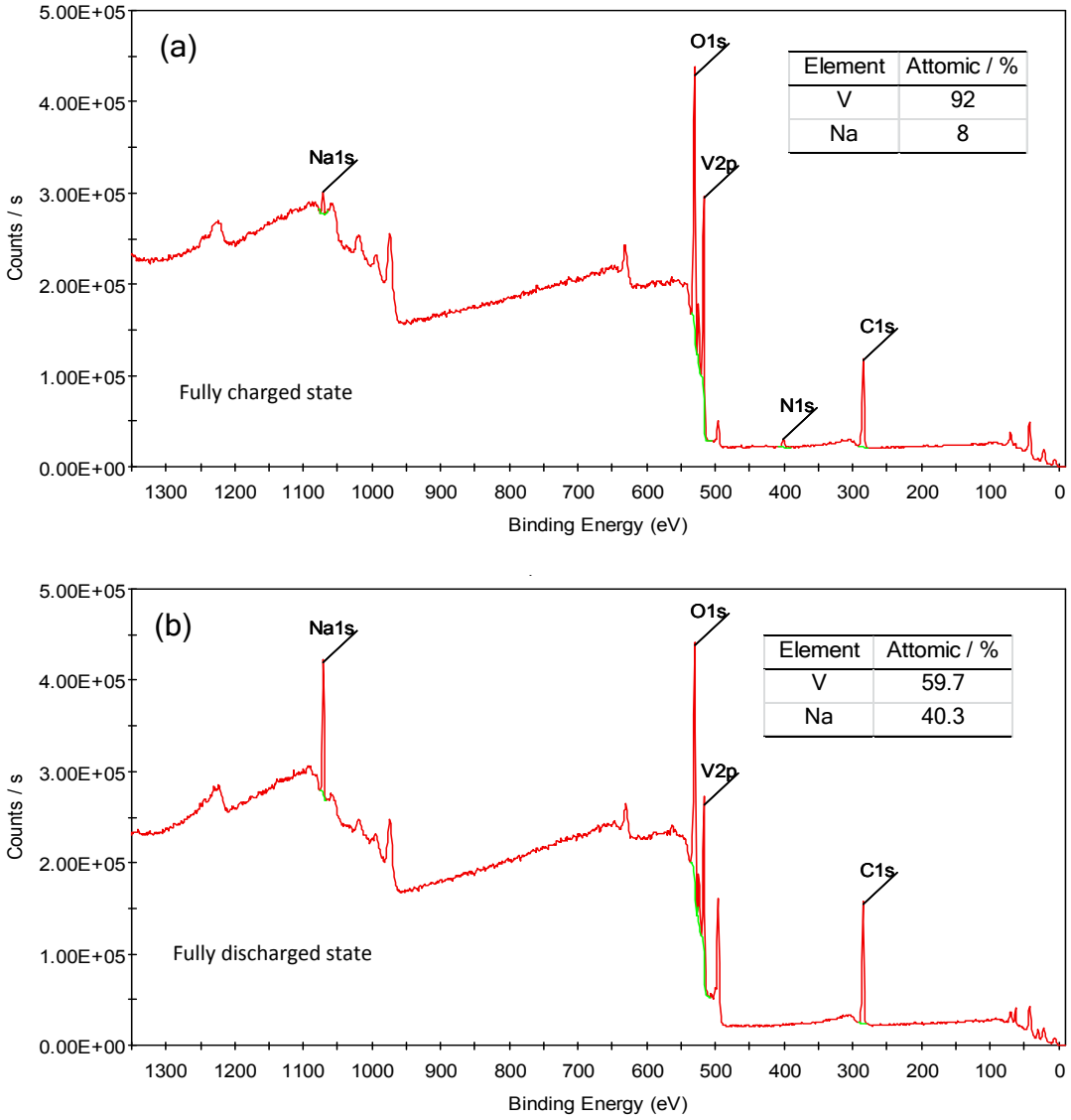

Fig. S3 XPS survey spectra for the V_2O_5 film electrodes at (a) fully charged state (100% depth of charge) and (b) fully discharge state (100% depth of discharge) in the 100th discharge/charge cycle. The Insets present the molar ratio of V and Na in the V_2O_5 film electrode.

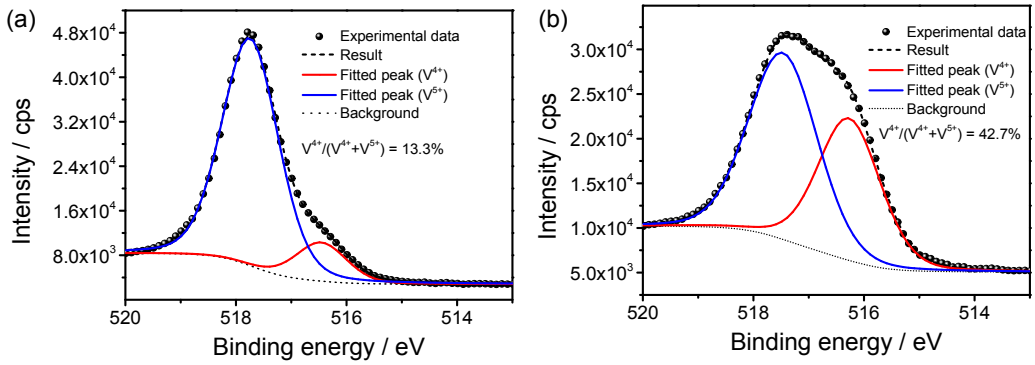

Fig. S4 XPS V2$p_{3/2}$ spectra of the V_2O_5 film electrodes at (a) fully charged state (100% depth of charge) and (b) fully discharge state (100% depth of discharge) in the 100th discharge/charge cycle.