

Electronic Supplementary Information

A high rate and stable electrode of the $\text{Na}_3\text{V}_2\text{O}_2\text{x}(\text{PO}_4)_2\text{F}_{3-2\text{x}}$ -rGO composite with cellulose binder for Sodium-ion batteries†

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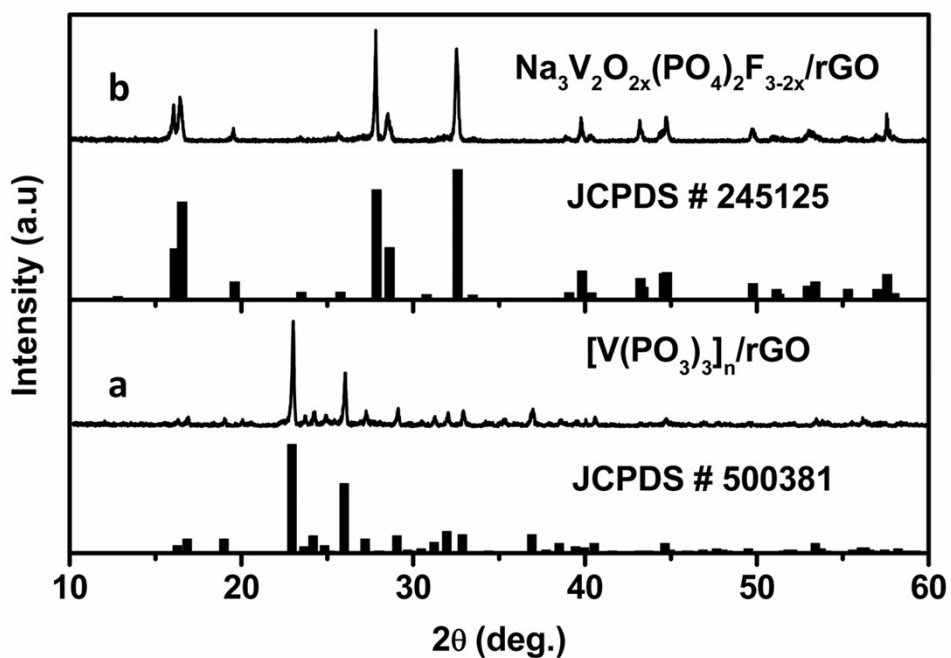


Figure S1: powder XRD patterns for the $[\text{V}(\text{PO}_3)_3]_n$ -rGO and NVOPF-rGO composites along with their JCPDS data

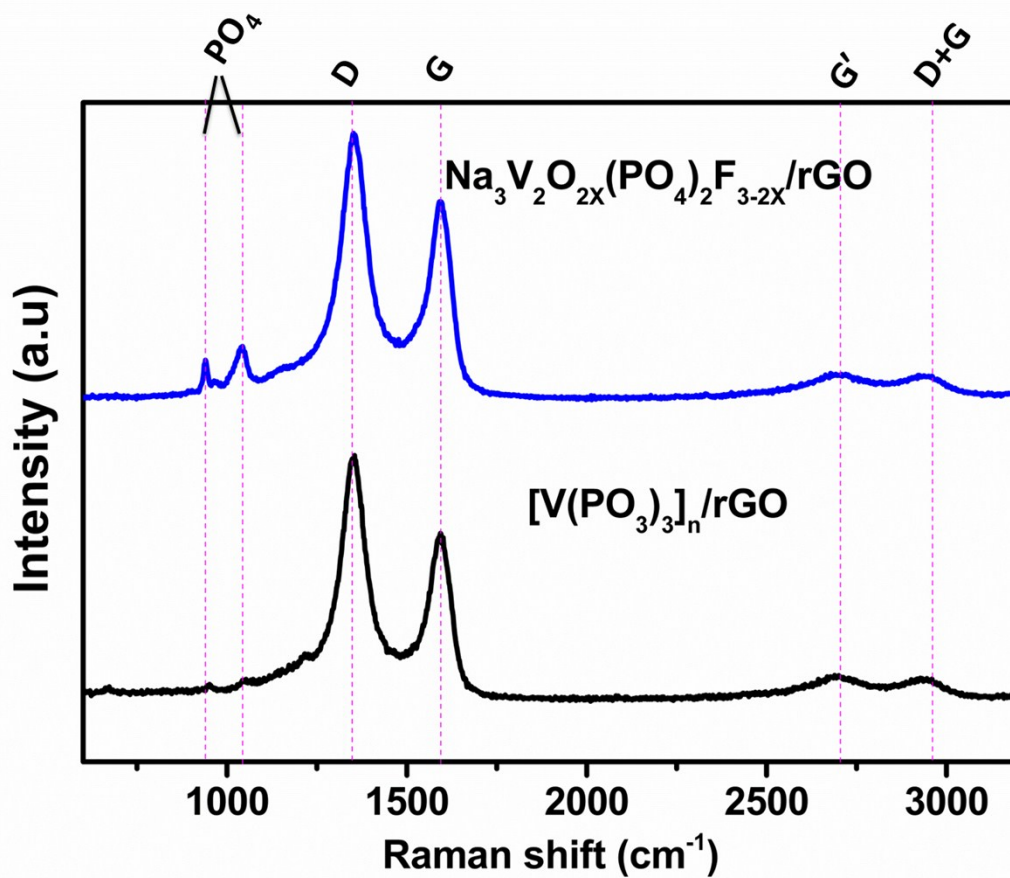


Figure S2: Raman spectra for both $[\text{V}(\text{PO}_3)_3]_n\text{-rGO}$ and the $\text{Na}_3\text{V}_2\text{O}_{2x}(\text{PO}_4)_2\text{F}_{3-2x}\text{-rGO}$ composites

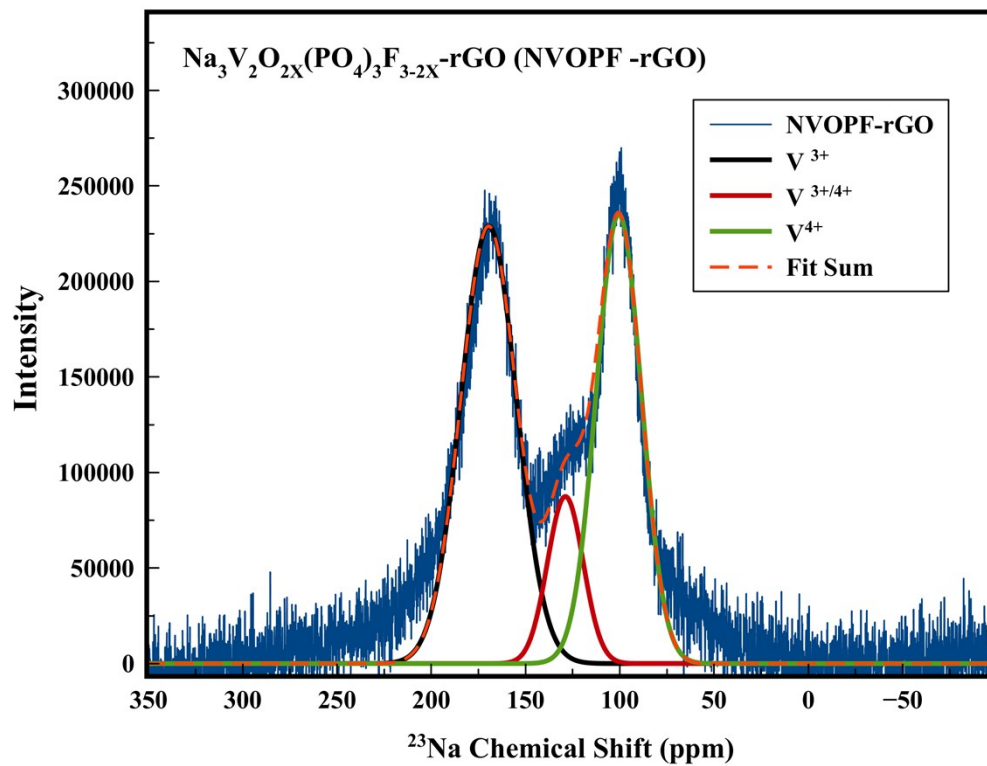


Figure S3: ^{23}Na solid-state NMR spectrum of the $\text{Na}_3\text{V}_2\text{O}_{2x}(\text{PO}_4)_2\text{F}_{3-2x}\text{-rGO}$ composite

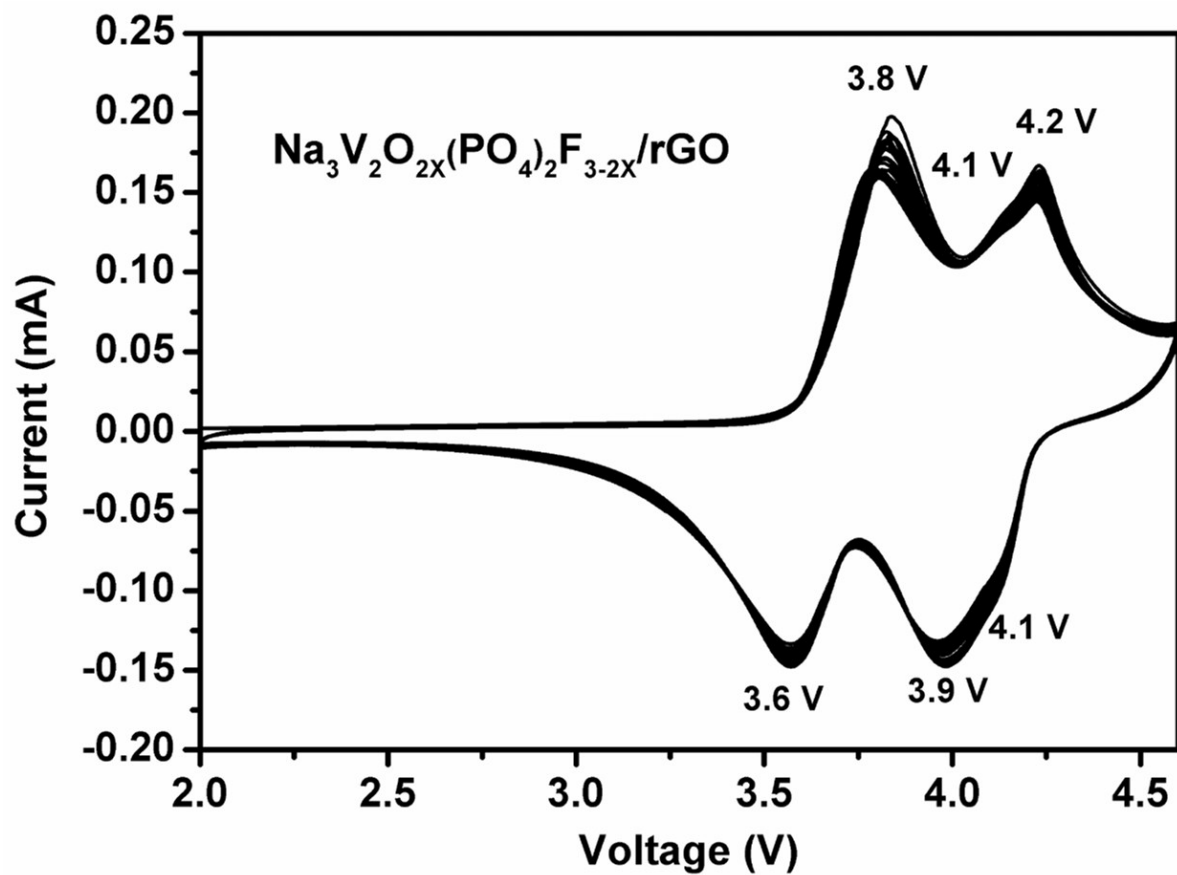


Figure S4: CV plot for the $\text{Na}_3\text{V}_2\text{O}_{2x}(\text{PO}_4)_2\text{F}_{3-2x}/\text{rGO}$ composite with PVDF binder.

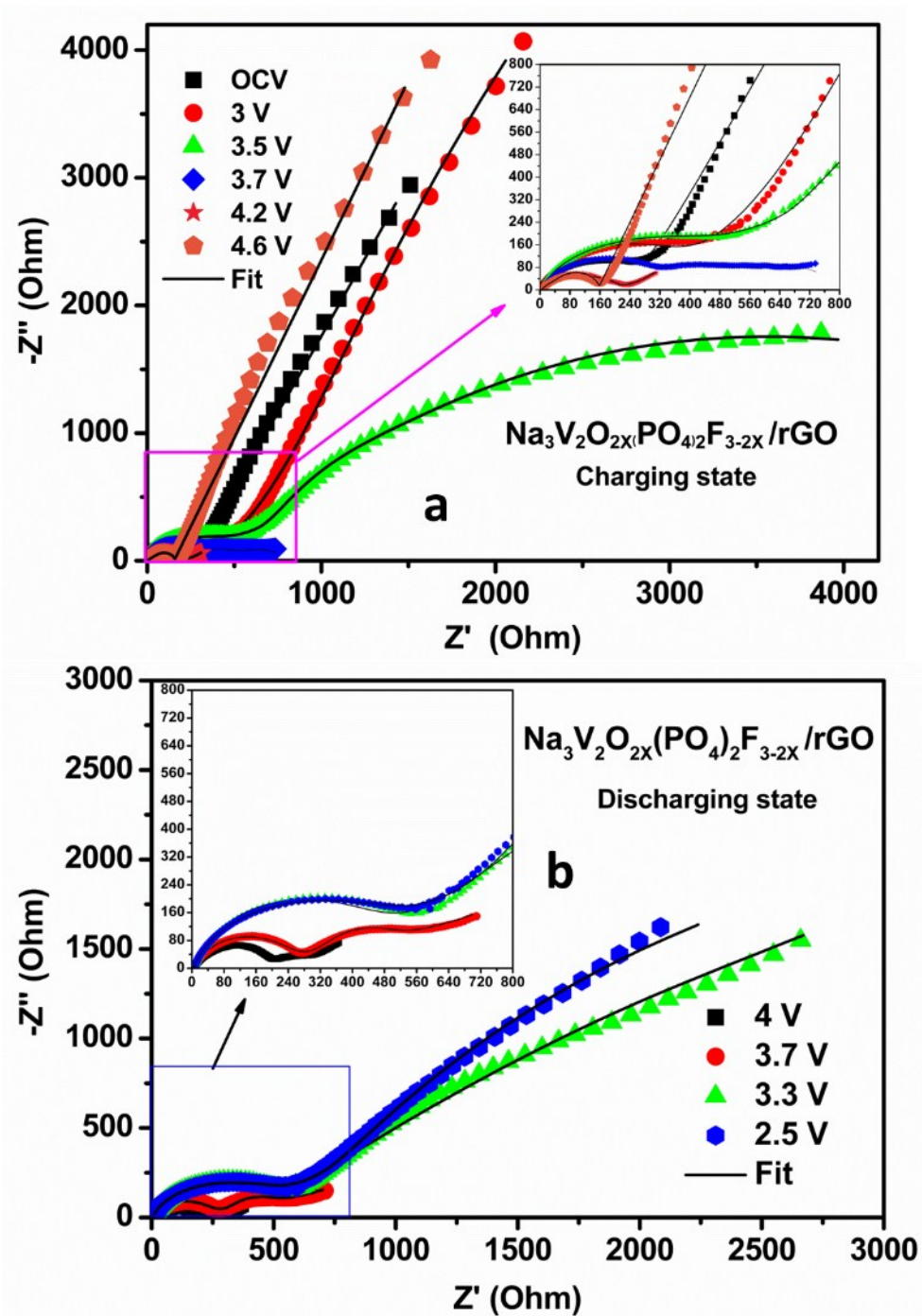


Figure S5: Nyquist plots for the $\text{Na}_3\text{V}_2\text{O}_{2x}(\text{PO}_4)_2\text{F}_{3-2x}/\text{rGO}$ composite with CMC binder electrode during (a) charging and (b) discharging states.

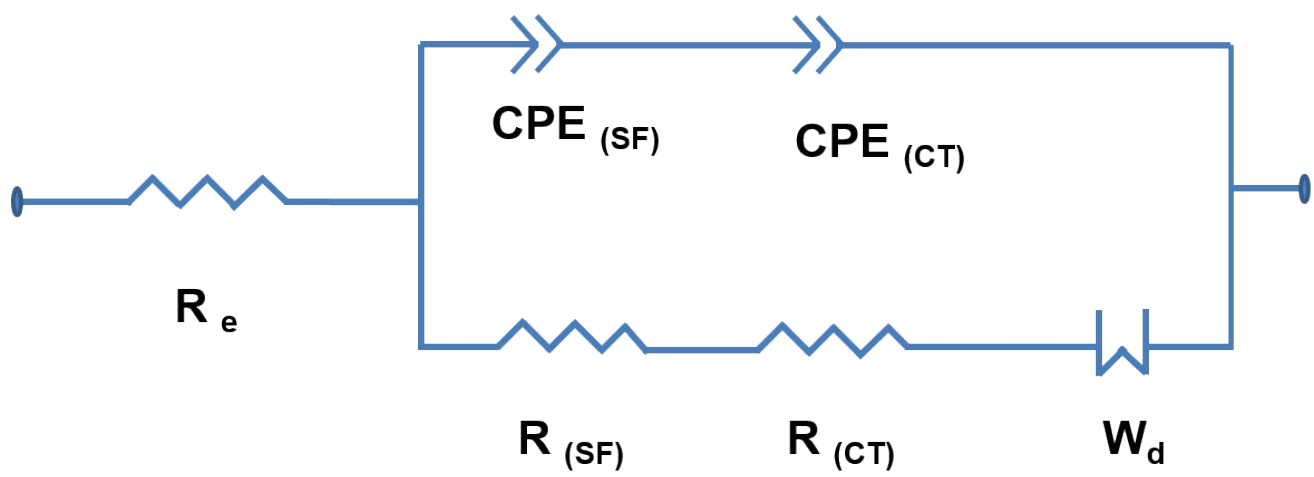


Figure S6: Electrical equivalent circuit consisting of resistors and constant phase elements for $\text{Na}_3\text{V}_2\text{O}_{2x}(\text{PO}_4)_2\text{F}_{3-2x}/\text{rGO}$ composite electrode.

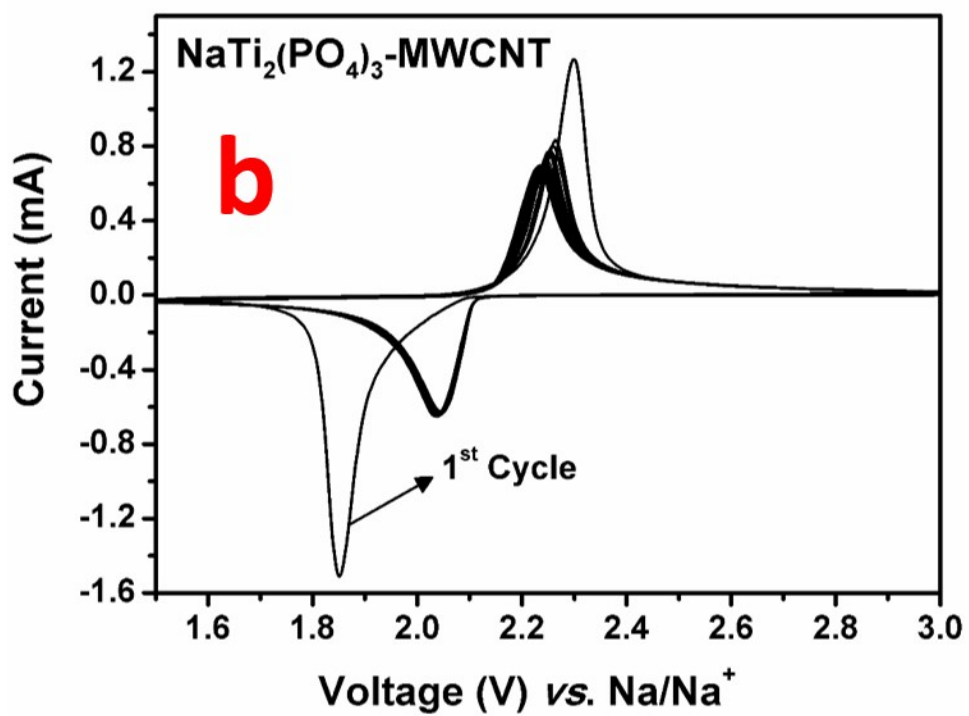
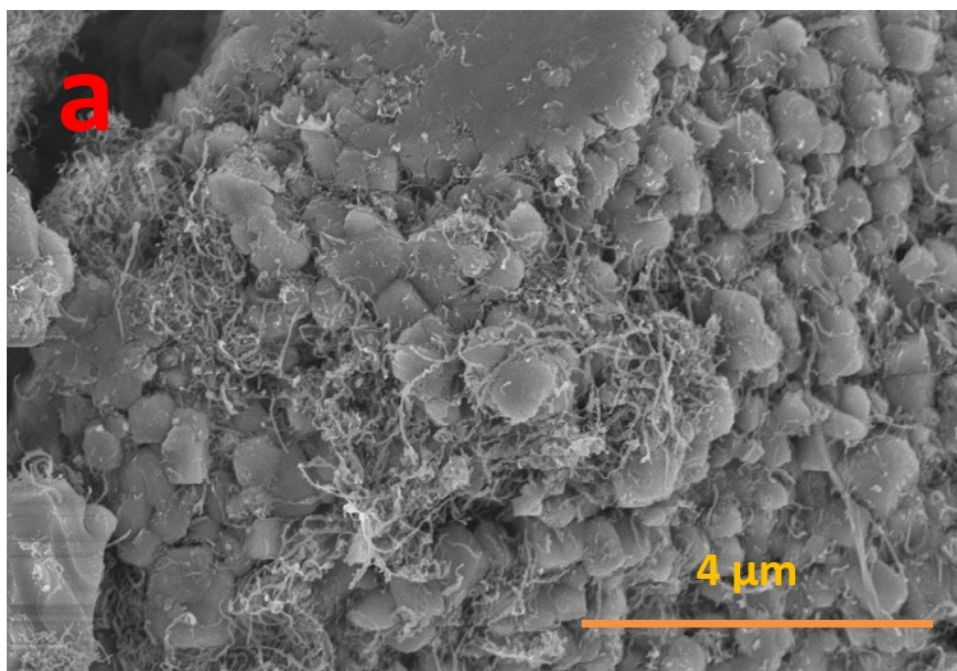


Figure S7: a) SEM image and b) Cyclic voltammetry plot of the NaTi₂(PO₄)₃-MWCNT versus Na/Na⁺.