Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting information

P2-Type Transition Metal Oxides for High Performance Na-Ion Battery Cathodes

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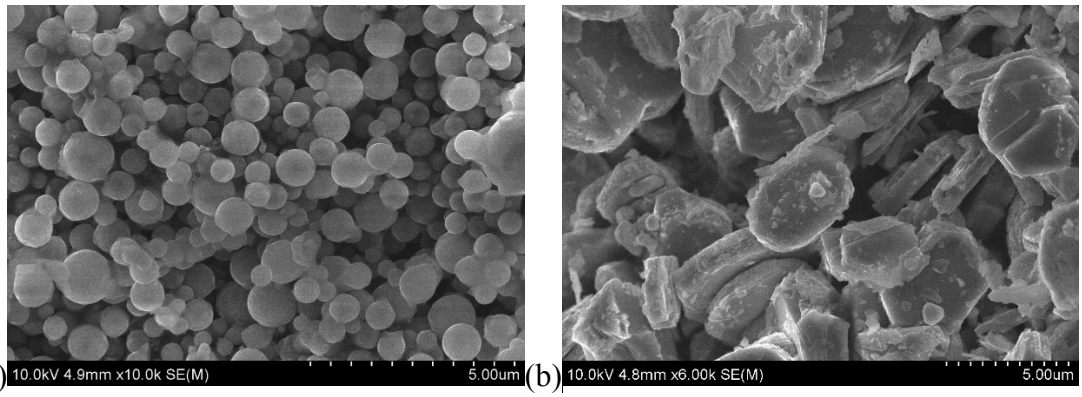

Figure S1. SEM images of $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ particles prepared by USP before (a) and after (b) heat treatment.

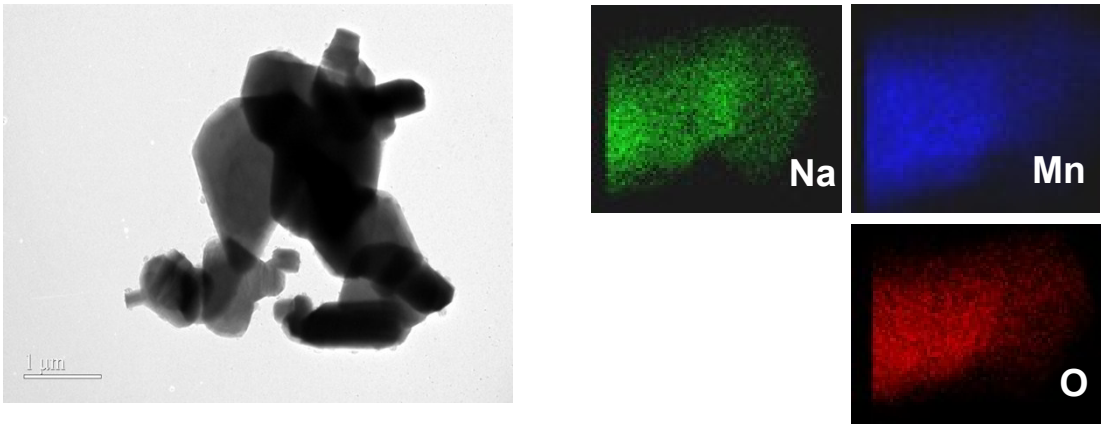

Figure S2. TEM image and EDS mapping of $Na_{0.67}MnO_2$ particles after heat treatment.

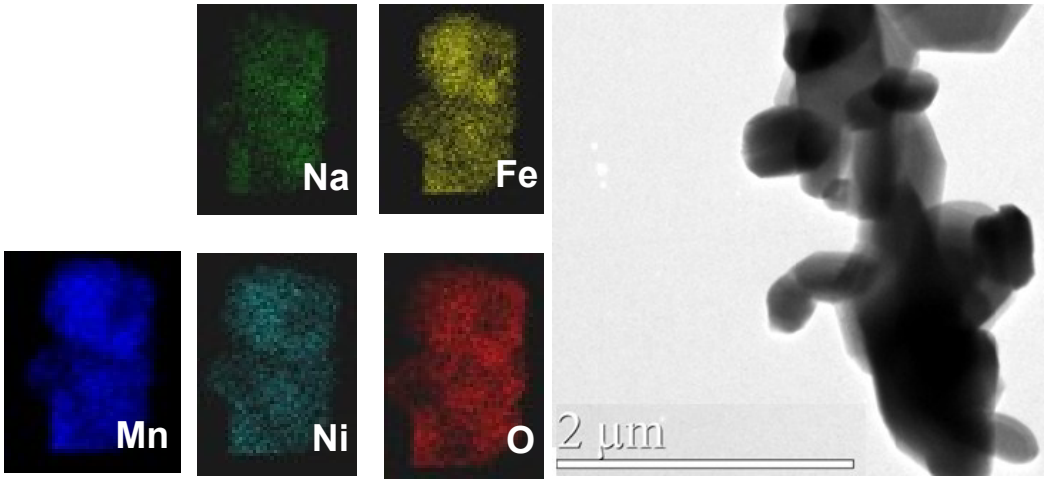

Figure S3. TEM image and EDS mapping of $Na_{0.67}Mn_{0.65}Fe_{0.20}Ni_{0.15}O_2$ particles after heat treatment.

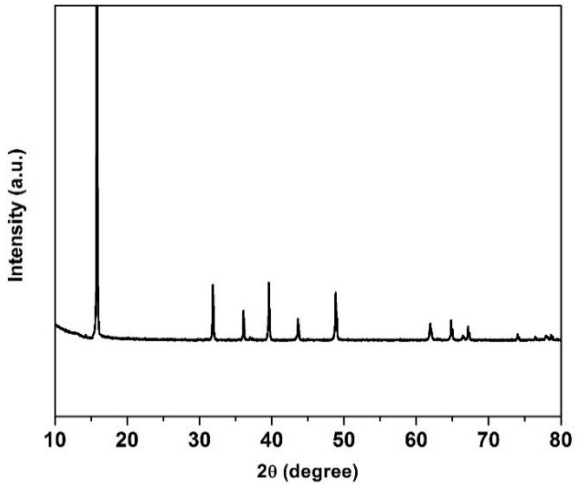

Figure S4. XRD full-pattern fitting of $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ sample after heat treatment.

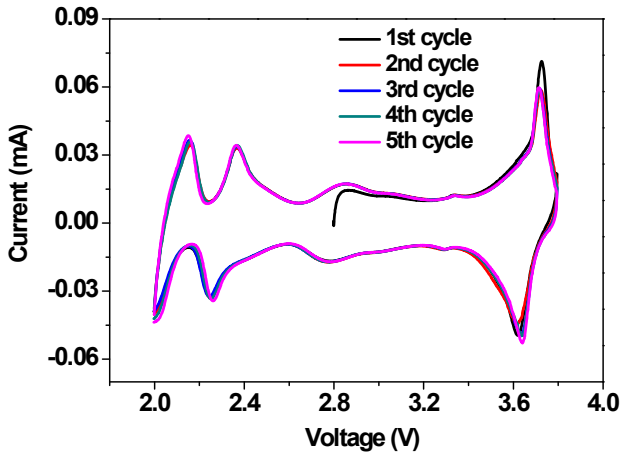

Figure S5. Cyclic voltammograms of $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ scanned between 2.0–3.8 V at a rate of 0.1 mV/s.

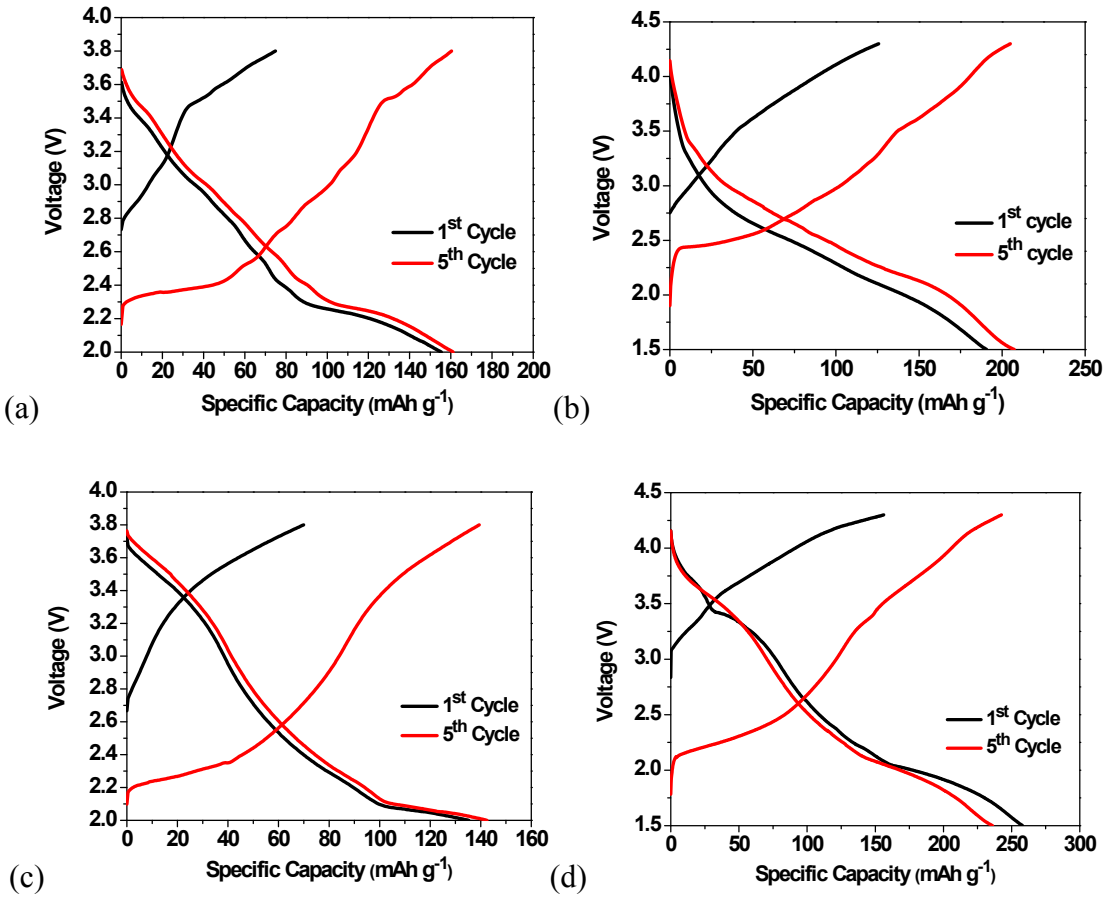

Figure S6. Galvanostatic charge/discharge curves of $Na_{0.67}MnO_2$ in narrow (a) and expanded (b) cutoff window; Galvanostatic charge/discharge curves of $Na_{0.67}Fe_{0.20}Ni_{0.15}Mn_{0.65}O_2$ in narrow (c) and expanded (d) cutoff window.

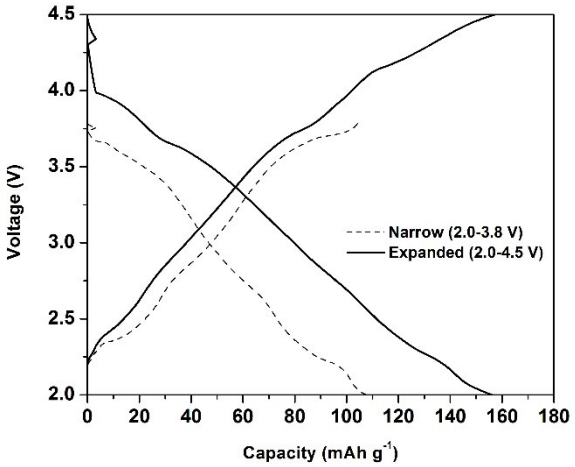

Figure S7. Galvanostatic charge/discharge curves of $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ cell cycled at 0.1 C.

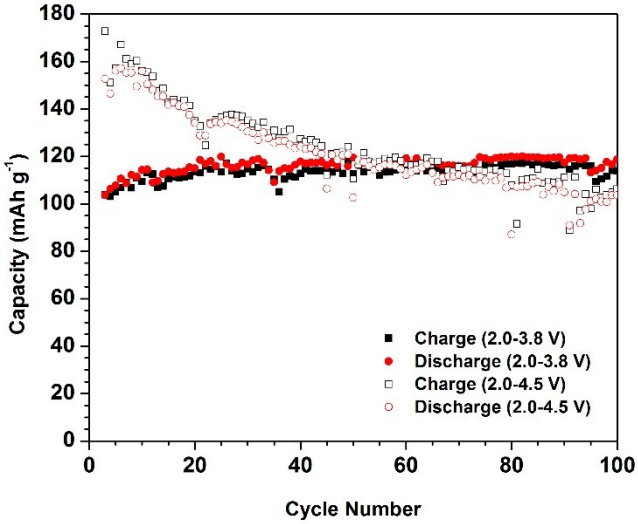

Figure S8. Capacity retention of $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ cycled at 0.1 C in various voltage windows.

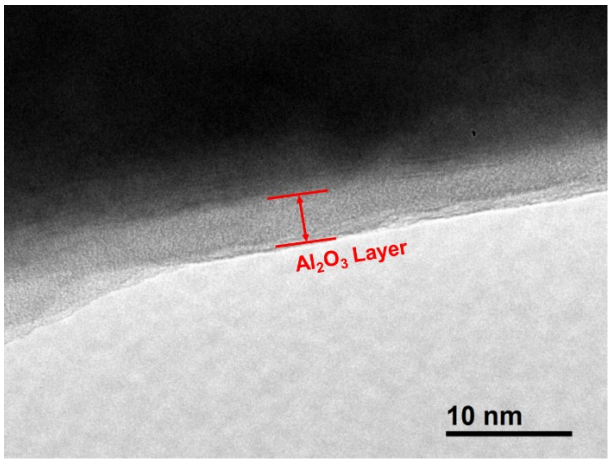

Figure S9. High resolution TEM image for the thin layer of Al_2O_3 on $Na_{0.67}MnO_2$ electrode.

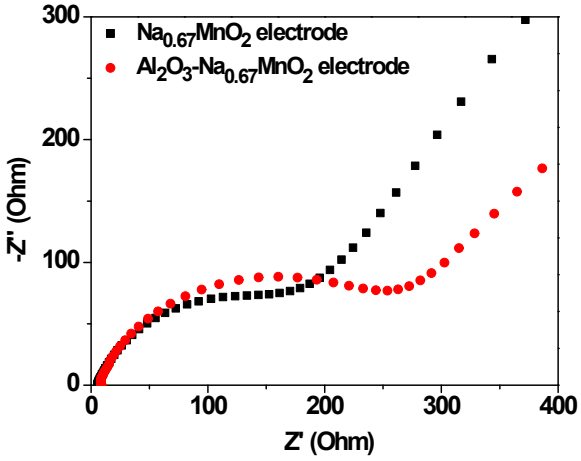

Figure S10. Impedance analysis for $Na_{0.67}MnO_2$ electrode and Al_2O_3-$Na_{0.67}MnO_2$ electrode.