Supporting Information

High-Performance Zr-Doped P3-type $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ Cathode for Na-ion Battery Applications

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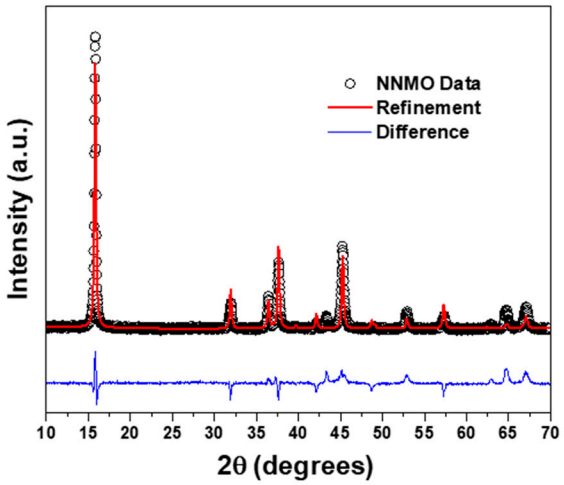


Figure S1: Rietveld refinement of NNMO sample.

Table S1: Rietveld refinement results of the NNMO sample

Sample	P3/P2 Phase fraction (wt.%)	Lattice parameter "a" (Å) of P3/P2	Lattice parameter "c" (Å) of P3/P2	R_{wp}/R_{exp}
NNMO	86/14	2.8808/2.874	16.833/11.14	10.6/3.4

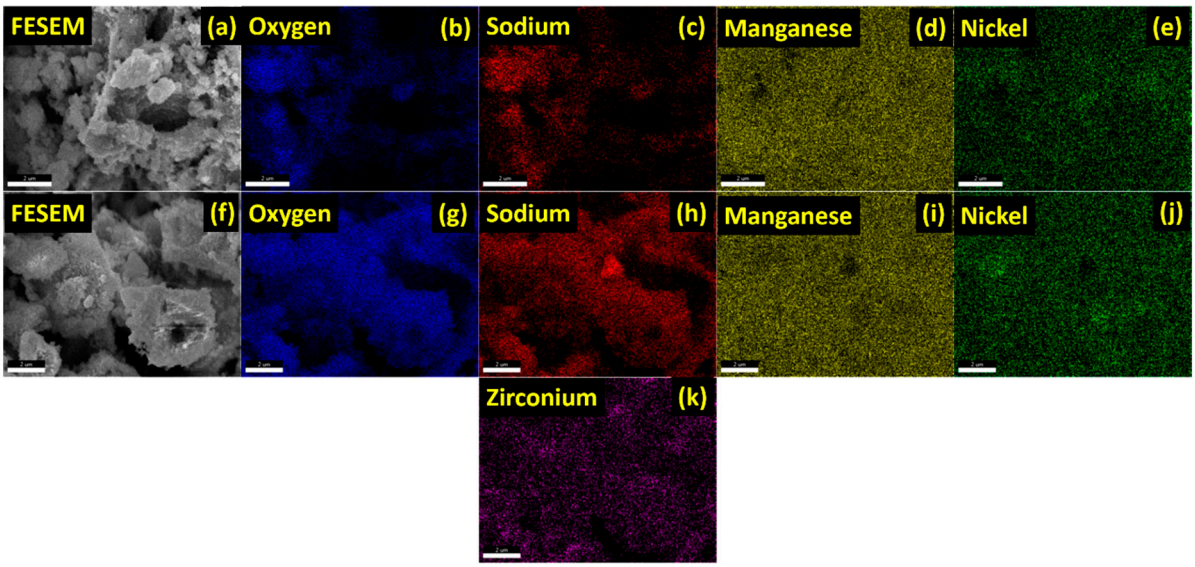


Figure S2 (a) FESEM and (b)-(e) EDAX mapping of NNMO ; (f) FESEM and (g)-(k) EDAX mapping of NNMZr6O

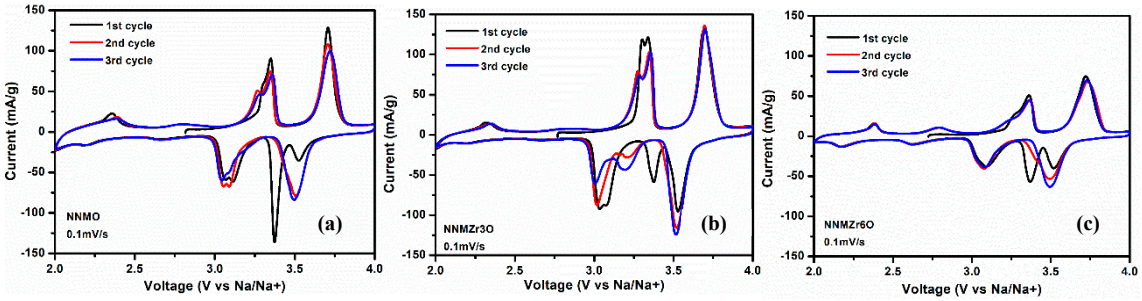


Figure S3: Cyclic Voltametry of (a) NNMO (b) NNMZr3O (c) NNMZr6O at a scan rate of 0.1mV/s

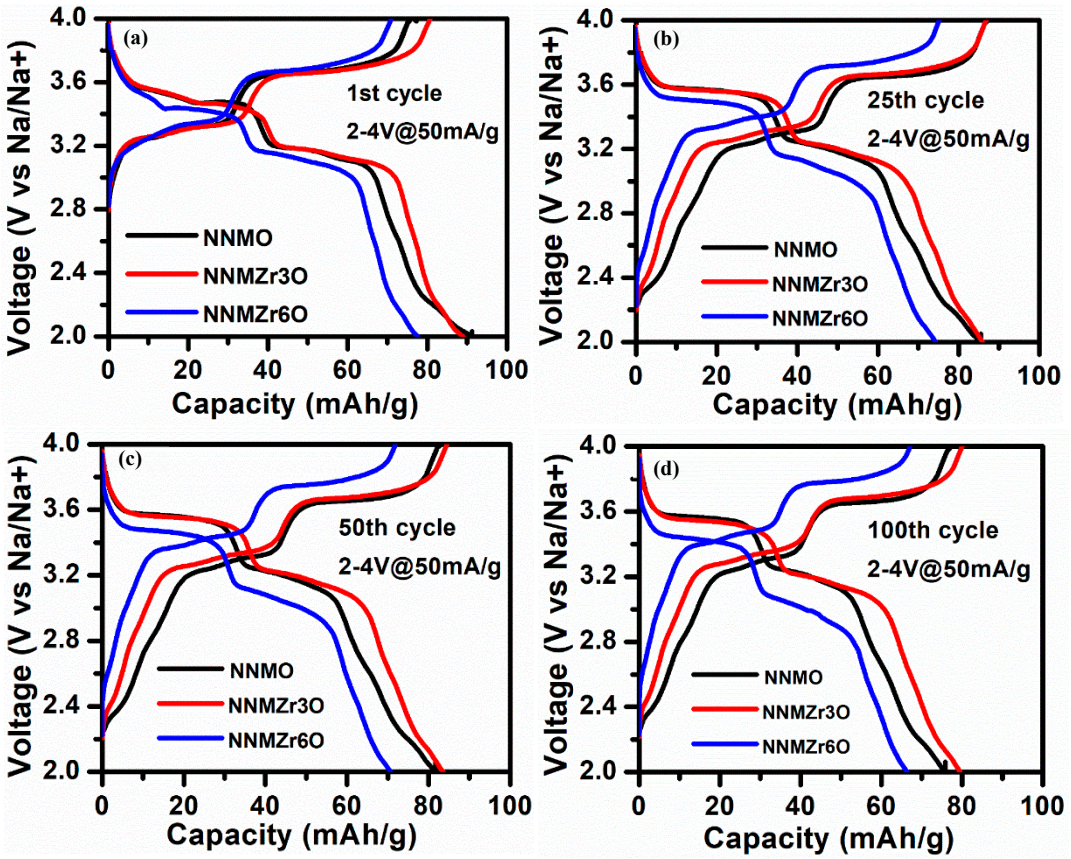


Figure S4: C-D profile of (a) NNMO (b) NNMZr3O (c) NNMZr6O at a particular cycle in the voltage window 2-4V

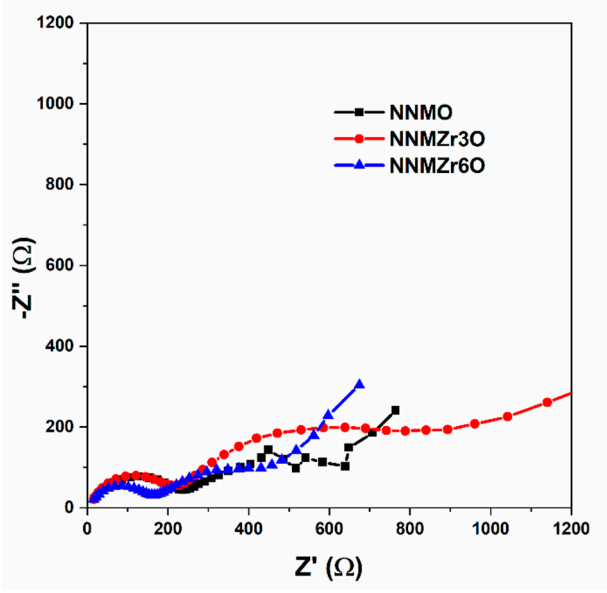


Figure S5: EIS of (a) NNMO (b) NNMZr3O (c) NNMZr6O at OCV condition, after 1st charge and 1st discharge

Table S2: Redox couples of pristine and doped samples at 25 mA/g cycled between voltage window 2-4V

Sample	Redox peaks for cycling condition 25 mA/g, 2-4V		
	A1/C1 (V)	**A2/C2 (V)**	**A3/C3 (V)**
NNMO	3.23/3.11	3.34/3.18	3.68/3.47
NNMZr3O	3.26/3.12	3.31/3.18	3.65/3.58
NNMZr6O	3.22/3.10	3.34/3.17	3.66/3.57

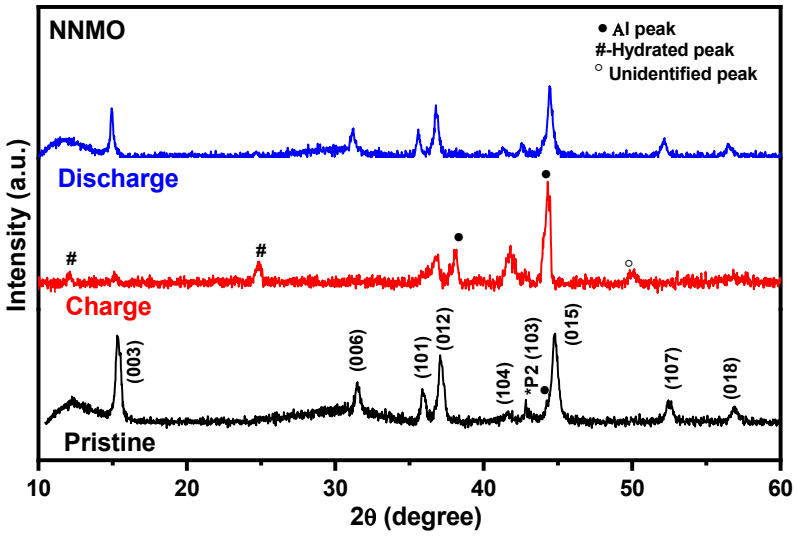


Figure S6: ex situ data of NNMO electrode before and after cycling

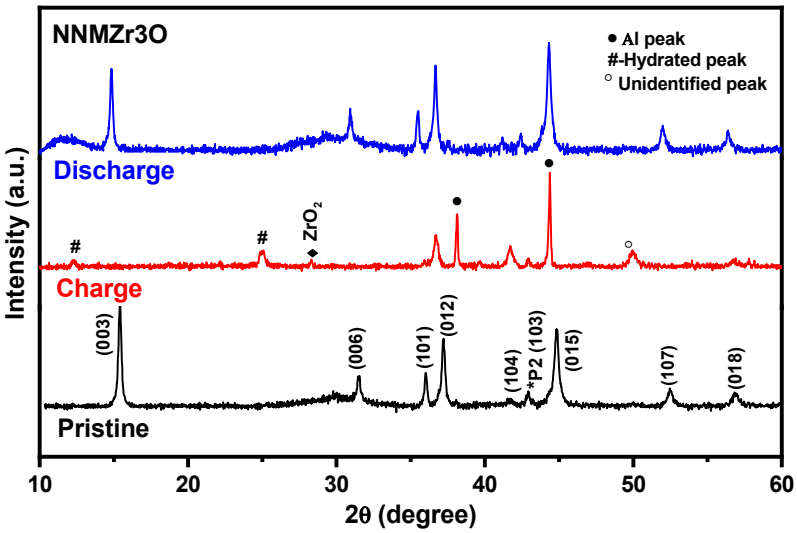


Figure S7: ex situ data of NNMZr3O electrode before and after cycling

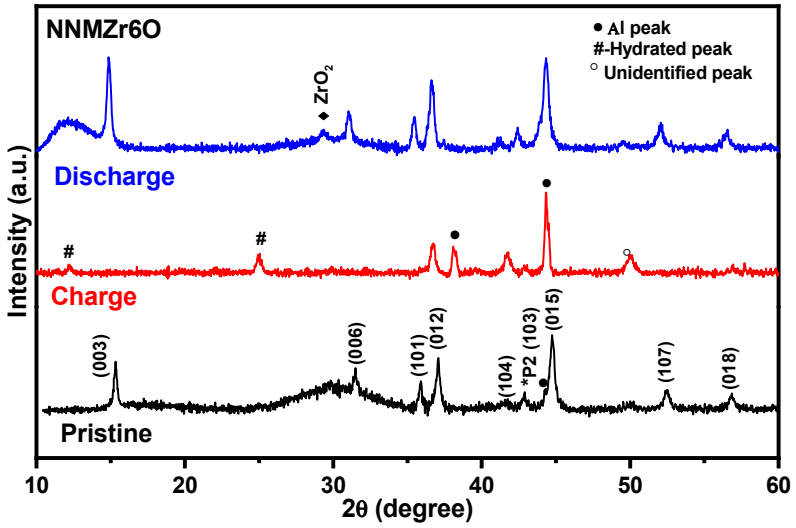


Figure S8: ex situ data of NNMZr6O electrode before and after cycling

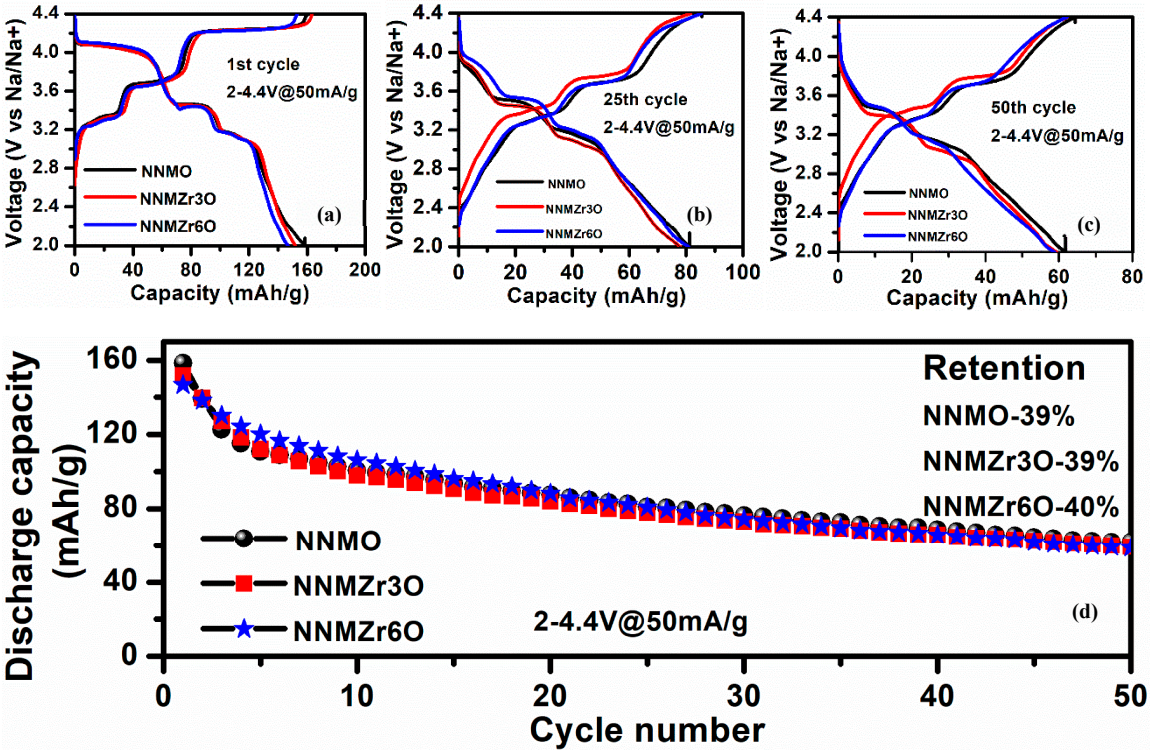


Figure S9 : C-D profile of (a)NNMO (b) NNMZr3O (c) NNMZr6O at a particular cycle and (d) cycling performance of all three samples