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Aqueous rechargeable lithium battery using NaV_6O_{15} nanoflakes as a high performance anode

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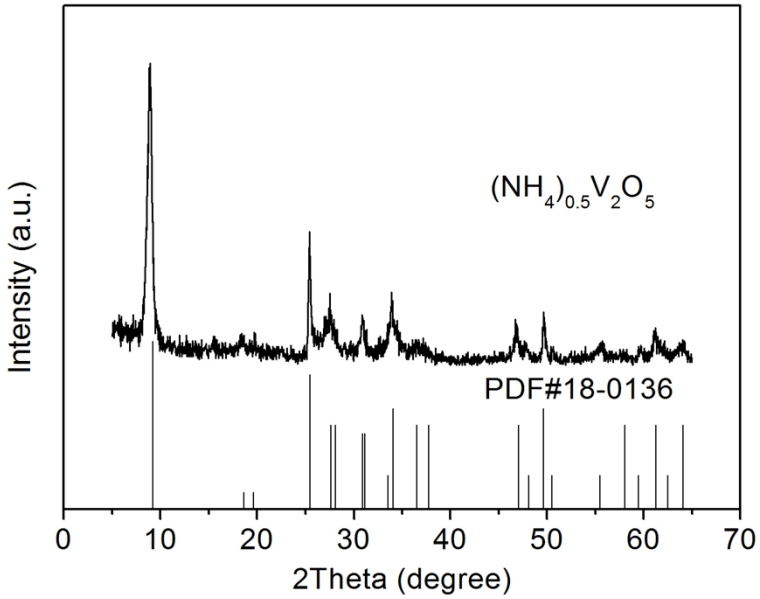

Fig. S1 XRD pattern of as-prepared $(NH_4)_{0.5}V_2O_5$ precursor.

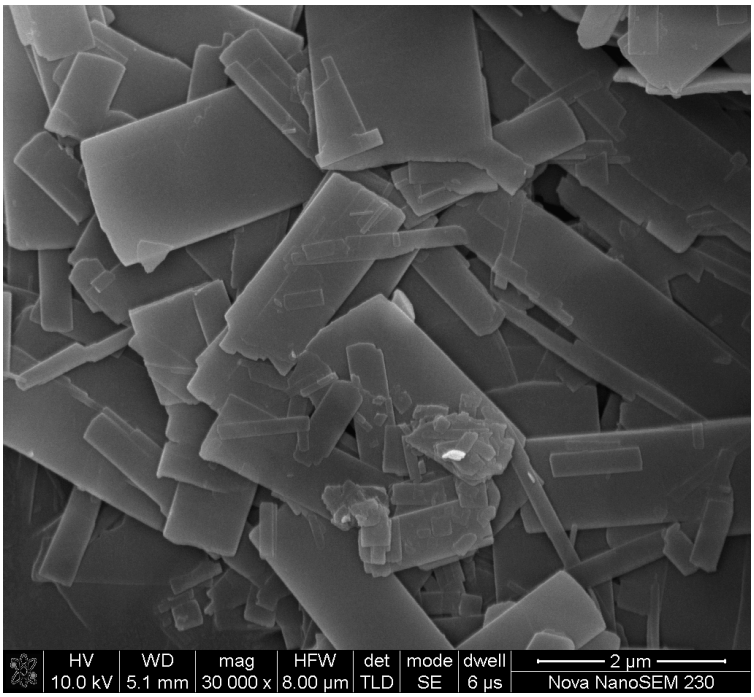

Fig. S2 SEM image of as-prepared $(NH_4)_{0.5}V_2O_5$ precursor.

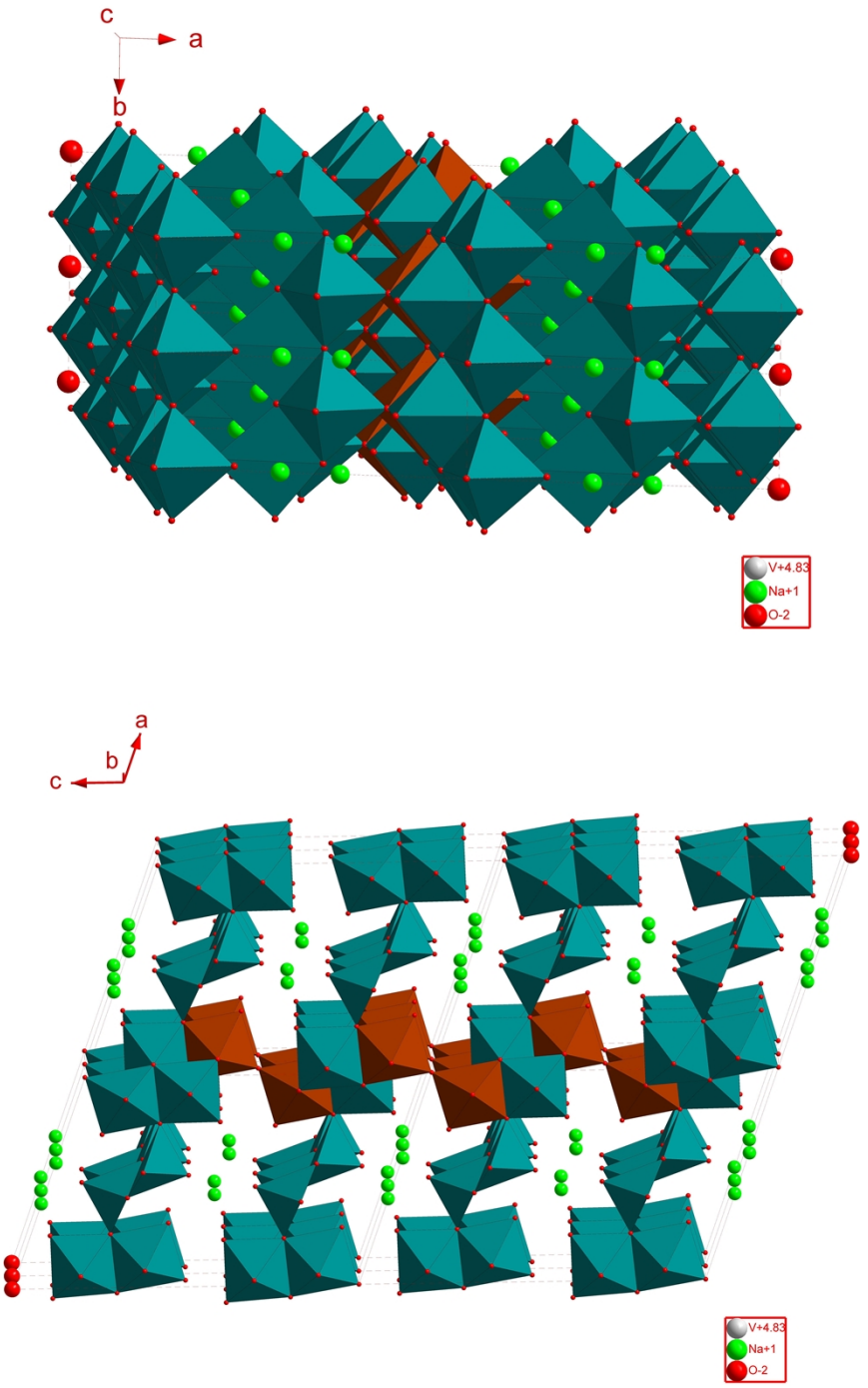

Fig. S3 The crystal structure of NaV_6O_{15} along different axis

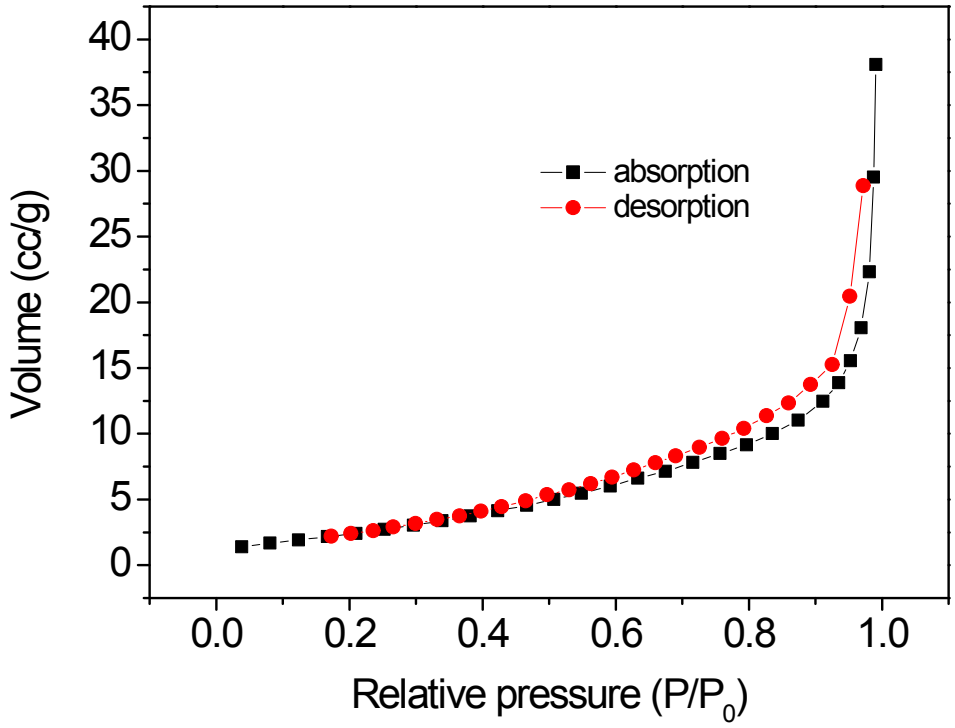

Fig. S4 N_2 adsorption-desorption isotherm of the NaV_6O_{15} nanoflake

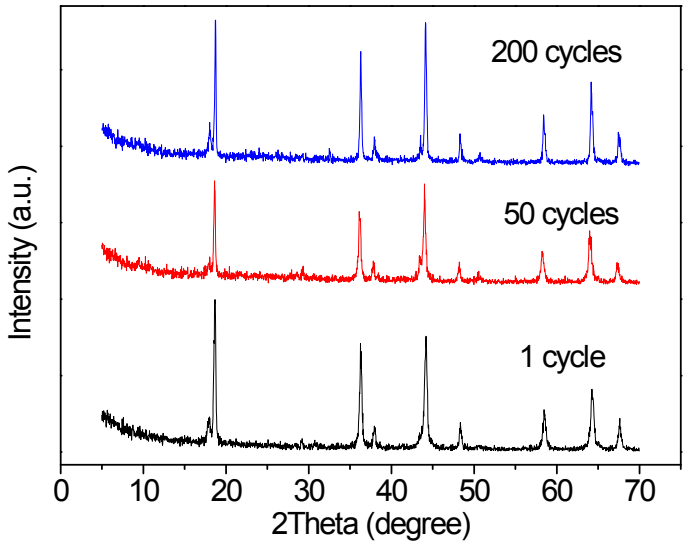

Fig. S5 XRD patterns of $LiMn_2O_4$ electrodes after different cycles with a charge voltage of 1.2 V

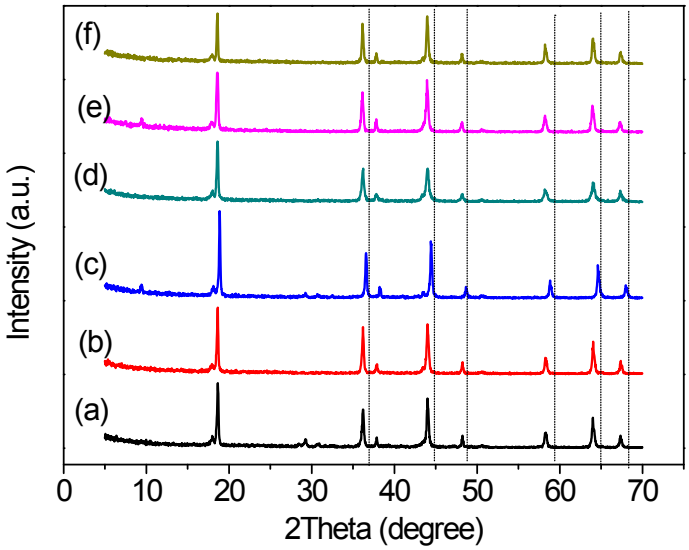

Fig. S6 XRD patterns of $LiMn_2O_4$ electrodes at different unit cell voltage: a - 0 V, b - 1.2 V, c - 1.7 V, d - 1.0 V, d – 0 V, f - 1.2 V at 1 C.

Table **S1** Impedance parameters for NaV_6O_{15}//Li_2SO_4// $LiMn_2O_4$ ARLB after different cycles。

Cells after different cycles	R_s (Ω)	R_{ct} (Ω)
5 cycles	1.684	20.30
50 cycles	0.5706	30.37
200 cycles	1.881	45.62

Table S2. Calculated crystal parameter of NaV_6O_{15} at different cell voltages (a - 0 V, b - 1.2 V, c - 1.7 V, d - 1.0 V, d- 0 V, f - 1.2 V).

Sample	*a*/nm	*b*/nm	*c*/nm	*β*/°	V/nm^3
a	1.0069	0.3609	1.5361	109.40	0.5265
b	1.0122	0.3631	1.5529	109.97	0.5364
c	1.0163	0.3625	1.5487	109.41	0.5379
d	1.0119	0.3611	1.5447	109.46	0.5322
e	1.0073	0.3614	1.5452	109.62	0.5299
f	1.0133	0.3618	1.5418	109.64	0.5324