Supporting Information

A mild exfoliation synthesis oftwo-dimensional layered V_2C MXenefor high performance lithium ion batteries

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Table S1 Comparison of reversible capacity of different pure MXene

Sample	Electrolyte	Current Density	Reversible Capacity ($mAh\ g^{-1}$)	Ref.
Ti_2CT_x	1.0 M $LiPF_6$	0.04 C	225	S1
V_2CT_x	1.0 M $LiPF_6$	1 C	260	S2
Nb_2CT_x	1.0 M $LiPF_6$	1 C	170	S2
$Ti_3C_2T_x$	1.0 M $LiPF_6$	0.1 C	178.5	S3
$Nb_4C_3T_x$	1.0 M $LiPF_6$	0.1 A g^{-1}	380	S4
$Hf_3C_2T_x$	1.0 M $LiPF_6$	0.2 A g^{-1}	146	S5
V_2C (HCl+LiF)	1.0 M $LiPF_6$	0.1 A g^{-1}	397.6	this work
V_2C (HCl+LiF-3d)	1.0 M $LiPF_6$	0.1 A g^{-1}	402.9	this work

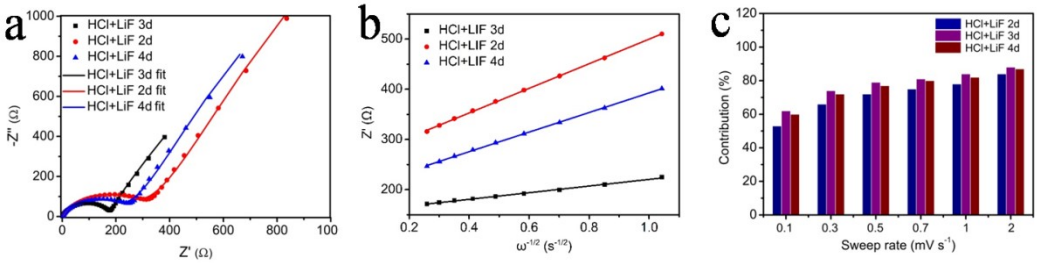

Fig. S1 (a) Nyquist plots (b) Z'-$\omega^{-1/2}$ relationship curve and (c) capacitance contribution ratio of V_2C materials etched during different time with etchant of HCl+LiF

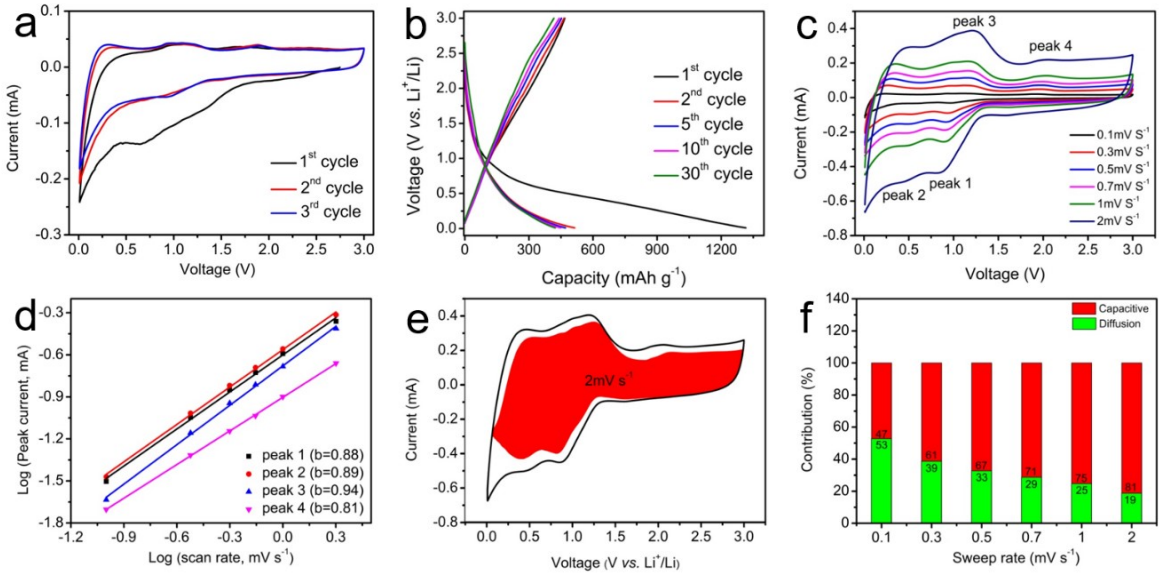

Fig.S2 Test curves of V_2C (HF) electrode: (a) CV curves at 200 mAh g^{-1}, (b) constant current charge-discharge curves, (c) CV curves at various sweep speeds, (d) the peak current-sweep velocity relation curve and, (e, f) capacitance contribution ratio at sweep speed of 2 mV $s^{-1}$and at various sweep rates, respectively.

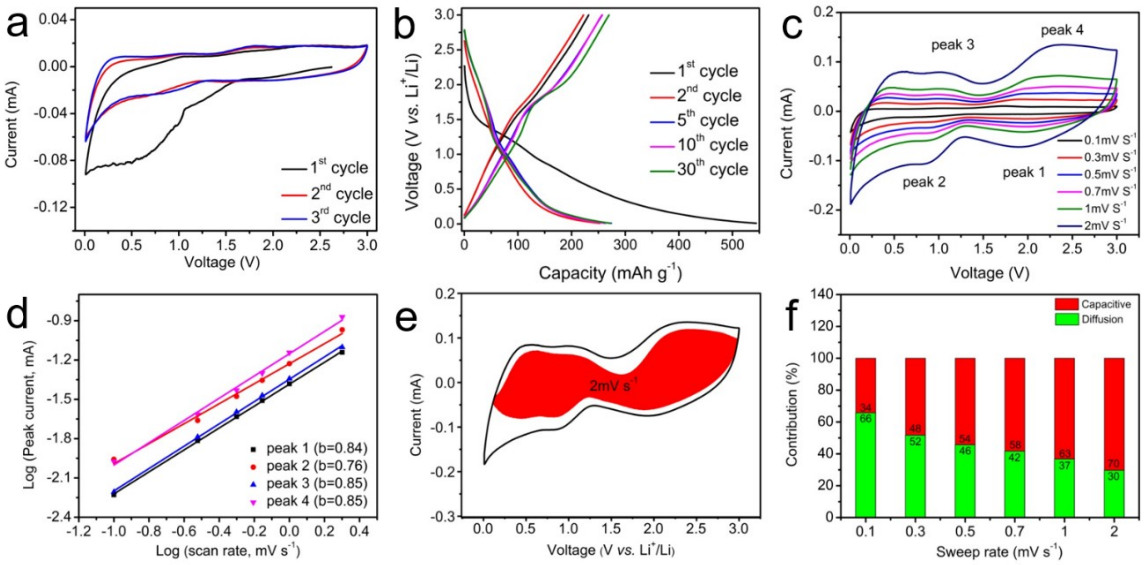

Fig.S3 Test curves of V_2C ($HF+H_2O_2$) electrode: (a) CV curves at 200 mAh g^{-1}, (b) constant current charge-discharge curves, (c) CV curves at various sweep speeds, (d) the peak current-sweep velocity relation curve and (e, f) capacitance contribution ratio at sweep speed of 2 mV $s^{-1}$and at various sweep rates, respectively.

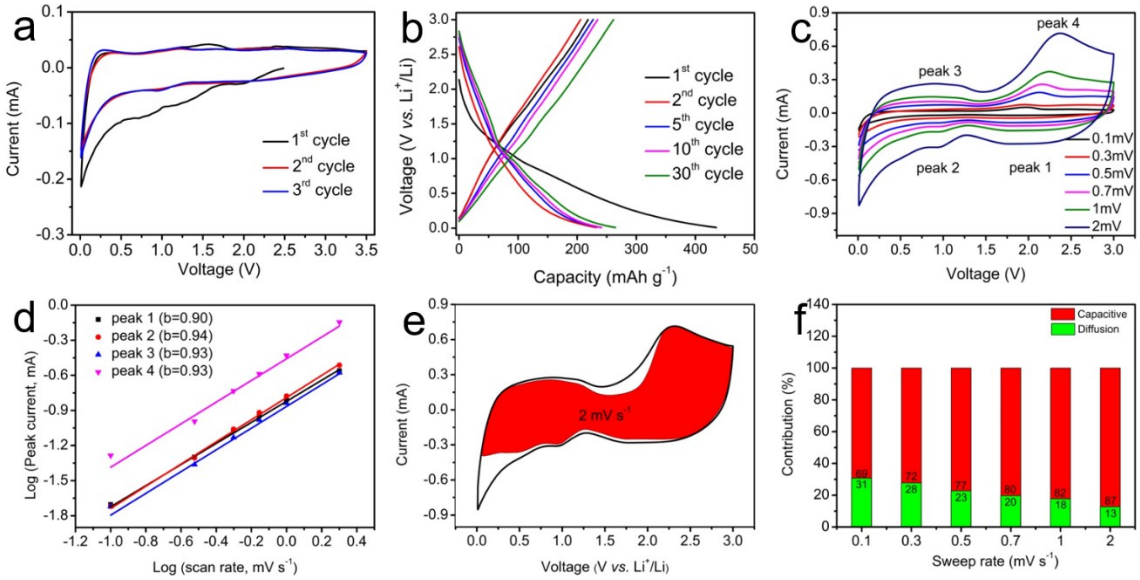

Fig.S4 Test curves of V_2C (HCl+LiF-4d) electrode: (a) CV curves at 200 mAh g^{-1}, (b) constant current charge-discharge curves, (c) CV curves at various sweep speeds, (d) the peak current-sweep velocity relation curve and (e, f) capacitance contribution ratio at sweep speed of 2 mV $s^{-1}$and at various sweep rates, respectively.

Supplementary References

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