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Supplementary Materials

A Free–Standing α–MoO_3/MXene Composite Anode for High–Performance Lithium Storage

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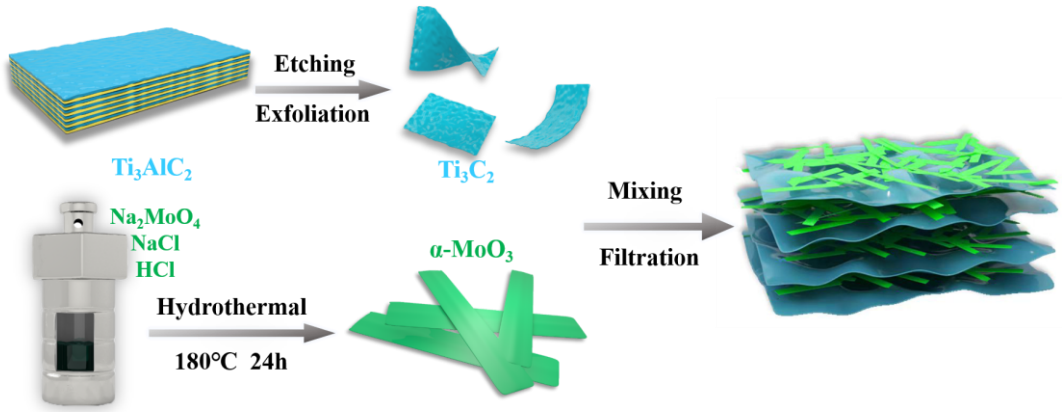

Figure S1. Schematic illustration of the preparation process of α–MoO_3/MXene.

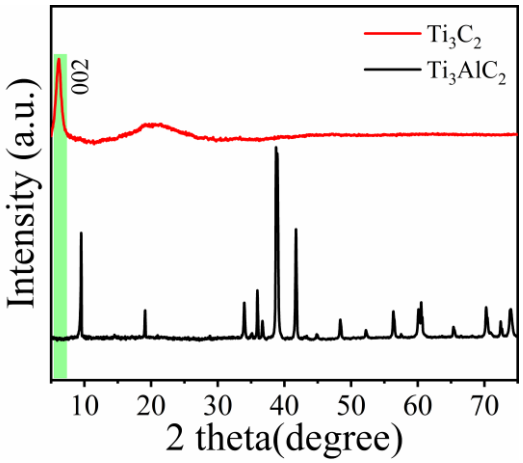

Figure S2. XRD diffraction patterns of Ti_3AlC_2 and Ti_3C_2.

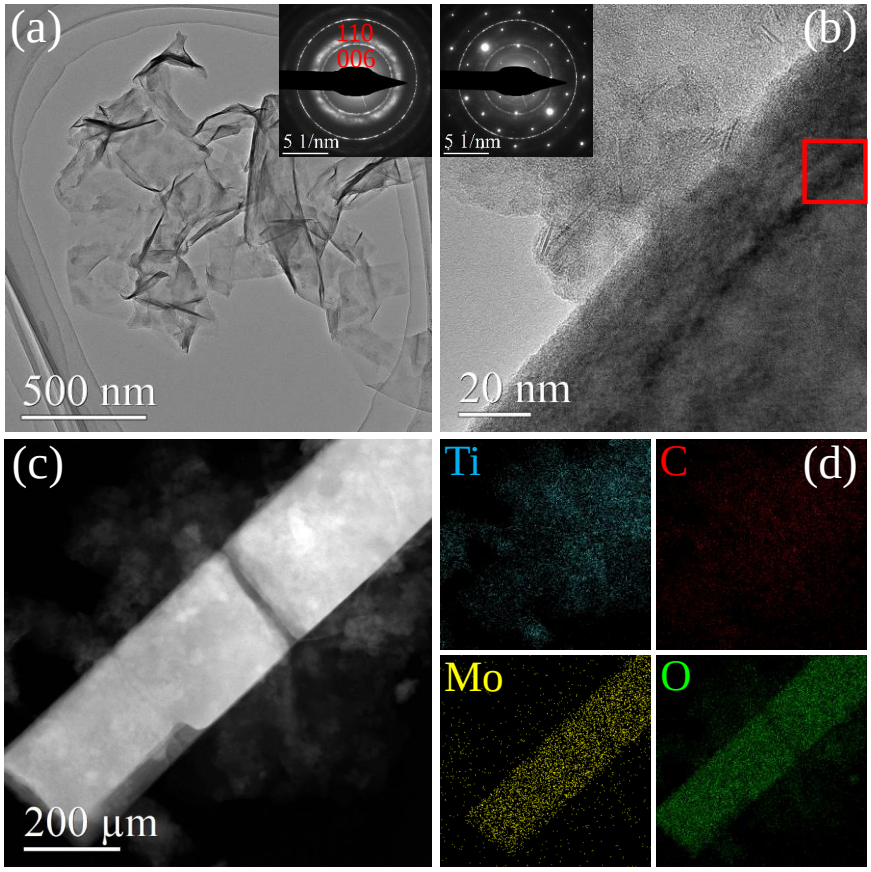

Figure S3. (a) TEM image of Ti_3C_2; the inset shows the SAED pattern. (b) HR−TEM image of α−MoO_3/MXene; the inset shows the SAED pattern. (c) HAADF image of α−MoO_3/MXene. (d) EDS element images of α−MoO_3/MXene.

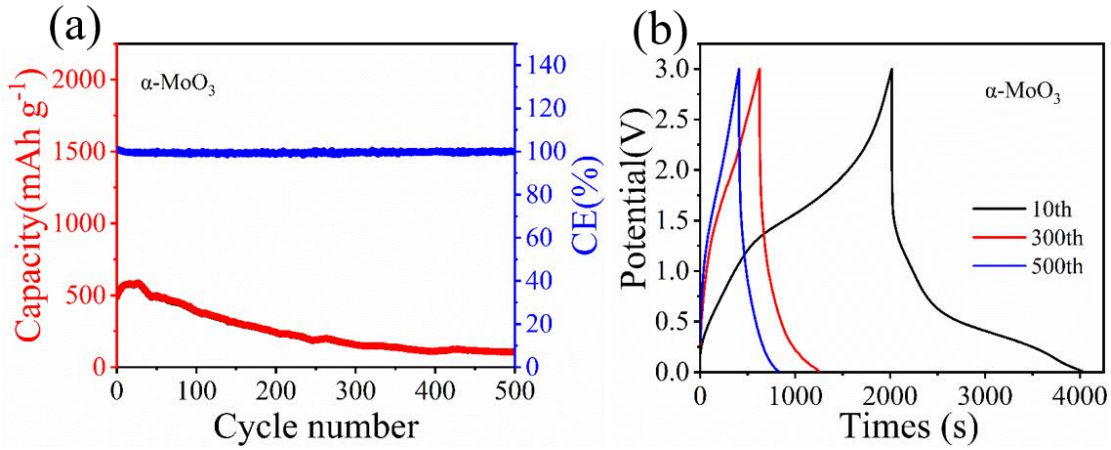

Figure S4. (a) Cycling performance of α−MoO_3 at 0.5 A g^{-1}. (b) GCD curves of α−MoO_3 in different cycles at 0.5 A g^{-1}.

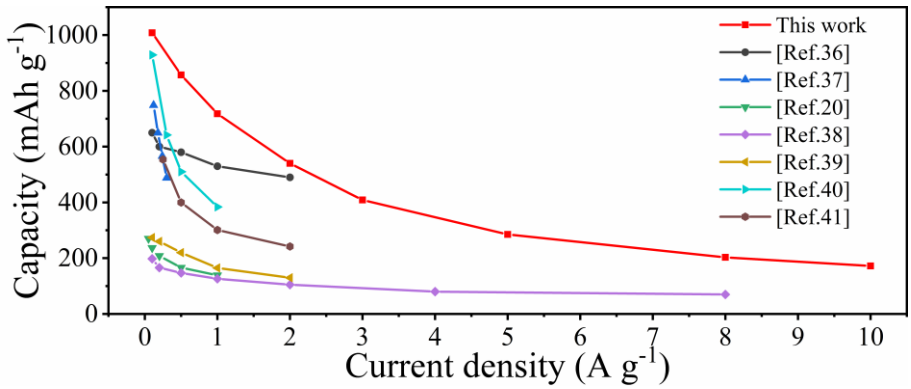

Figure S5. Rate capability at different current densities.

Table S1. Comparison of Li^+ storage performances of our α−MoO_3/MXene free−standing electrode with other reported Mo−based materials.

Materials	Current Density ($A\ g^{-1}$)	Discharge Capacity ($mAh\ g^{-1}$)	Rate Capability ($mAh\ g^{-1}$)	Cycling Stability	Ref.
α−MoO_3@FeO_x	0.1	650	490 (2 $A\ g^{-1}$)	1 $A\ g^{-1}$, 100 cycles, 110%	[36]
MoO_3@SnS_2	0.12	749	488 (0.3 $A\ g^{-1}$)	1 $A\ g^{-1}$,100 cycles, 53.6%	[37]
α−MoO_{3-x}@MXene	0.05	270	139 (1 $A\ g^{-1}$)	0.2 $A\ g^{-1}$, 500 cycles, 78.5%	[20]
MoO_2	0.1	198	70 (8 $A\ g^{-1}$)	8 $A\ g^{-1}$, 1500 cycles, 123%	[38]
α−MoO_{3-x}	0.1	274	88 (5$A\ g^{-1}$)	1 $A\ g^{-1}$, 1000 cycles, 30%	[39]
MoO_3@MoS_2	0.1	929	384 (5$A\ g^{-1}$)	0.1 $A\ g^{-1}$, 100 cycles, 84.1%	[40]
TiO_2−MoO_3	0.25	554	242 (2 $A\ g^{-1}$)	0.25 $A\ g^{-1}$, 100 cycles, 71.0%	[41]
α−MoO_3/MXene	0.1	1008	172 (10 $A\ g^{-1}$)	0.5 $A\ g^{-1}$, 500 cycles, 112%	This work