

Supporting Information

Highly Efficiently Delaminated Single Layered MXene Nanosheets with Large Lateral Size

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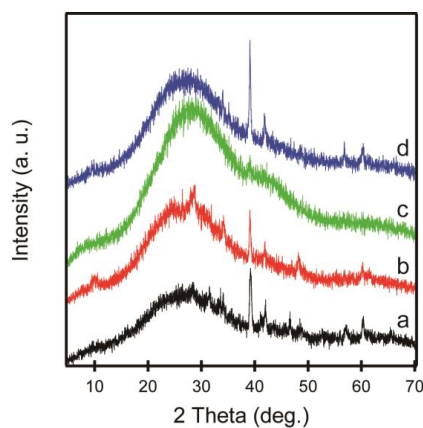


Figure S1. XRD patterns of Ti_3AlC_2 after etched with different amount of KOH: 0.0875 g (a), 0.175 g (b), 0.35 g (c) and 0.70 g (d).

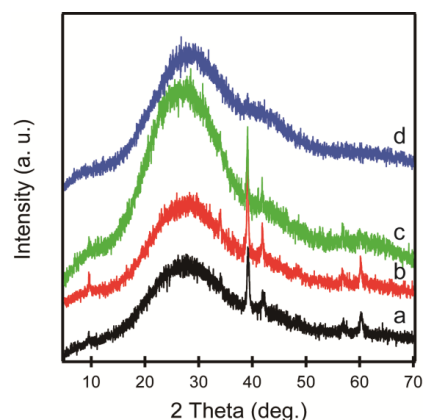


Figure S2. XRD patterns of Ti_3AlC_2 after etched with 0.35 g KOH at different temperatures: 90 °C (a), 120 °C (b), 150 °C (c) and 180 °C (d).

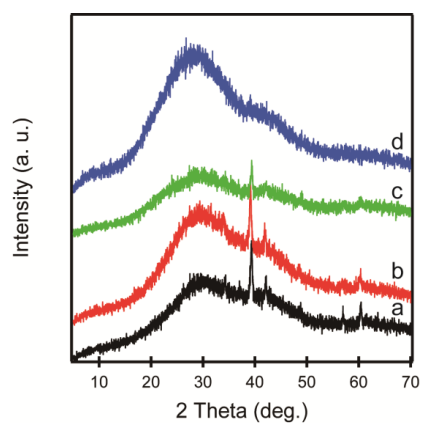


Figure S3. XRD patterns of Ti_3AlC_2 after etched with 0.35 g KOH at 180 °C: 6 h (a), 12 h (b), 18 h (c) and 24 h (d).

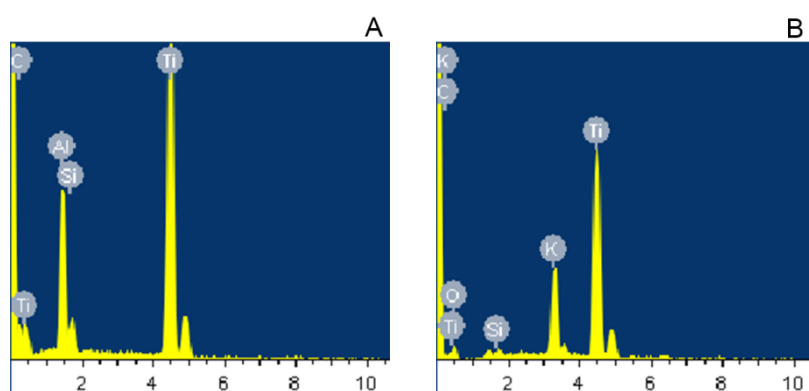


Figure S4. The elemental compositions of Ti_3AlC_2 precursor (A) and $\text{Ti}_3\text{C}_2(\text{OH})_2$ (B).

Table 2 ratios of elements from EDS

Sample	Ti (wt%)	Al(wt%)	C(wt%)	O(wt%)	K(wt%)
Ti_3AlC_2	56.03	12.71	28.33	-	-
$\text{Ti}_3\text{C}_2(\text{OH})_2$	50.84	-	12.57	24.00	12.59

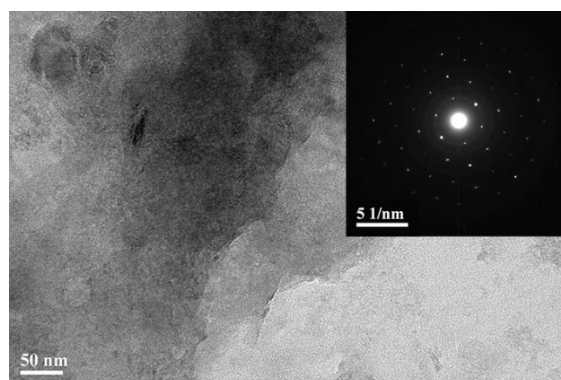


Figure S5. TEM image and corresponding selected area diffraction pattern of $\text{Ti}_3\text{C}_2(\text{OH})_2$

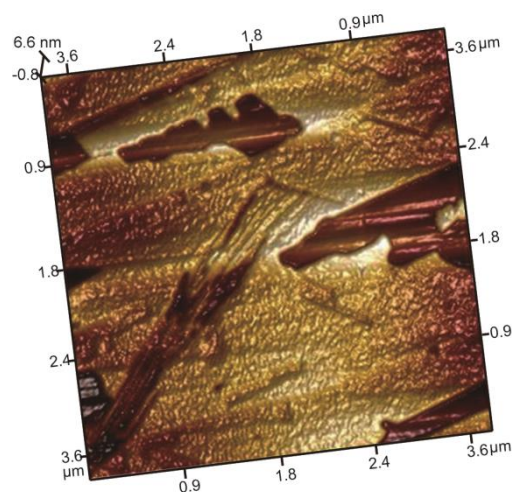


Figure S6. The 3D image of the AFM for the exfoliated 2D nanosheets

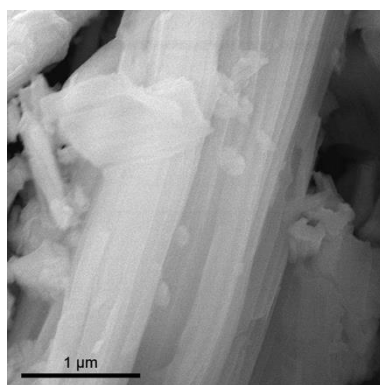


Figure S7 SEM image of the cross-section for the multilayer sample.

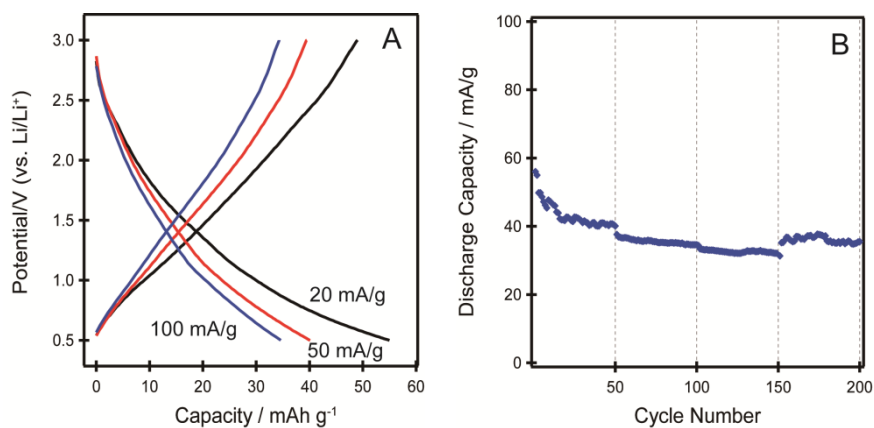


Figure S8. Electrochemical performance (A) and cycle curves (B) at different specific current for Ti₃C₂T_x electrode prepared with HF method.