Supporting Information

Fluoride-Free Synthesis of Surface-Modulated MXene via Molten Salt Etching for High-Performance Sodium-Ion Batteries

Junru Wu [a], Guoxu Ni[b], Qiuhong Cui [b,] *

[a] School of Mathematics and Computer, Guangdong Ocean University, Zhanjiang 524088, China

[b] Department of Materials Science and Engineering, School of Physical Sciences and Engineering, Beijing Jiaotong University, Beijing 100044, China.

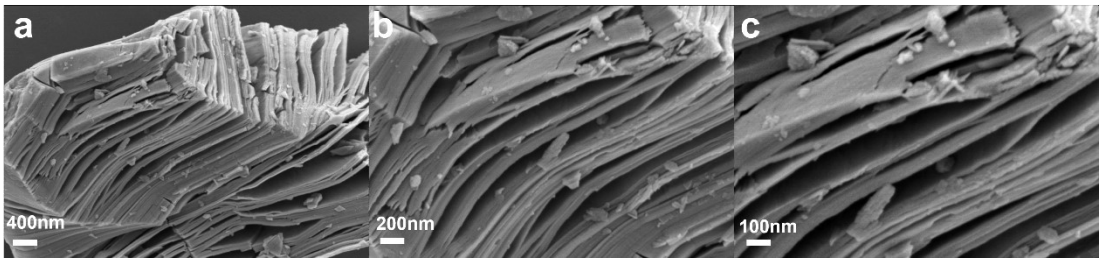

Figure. S1. SEM images of MXene-HF.

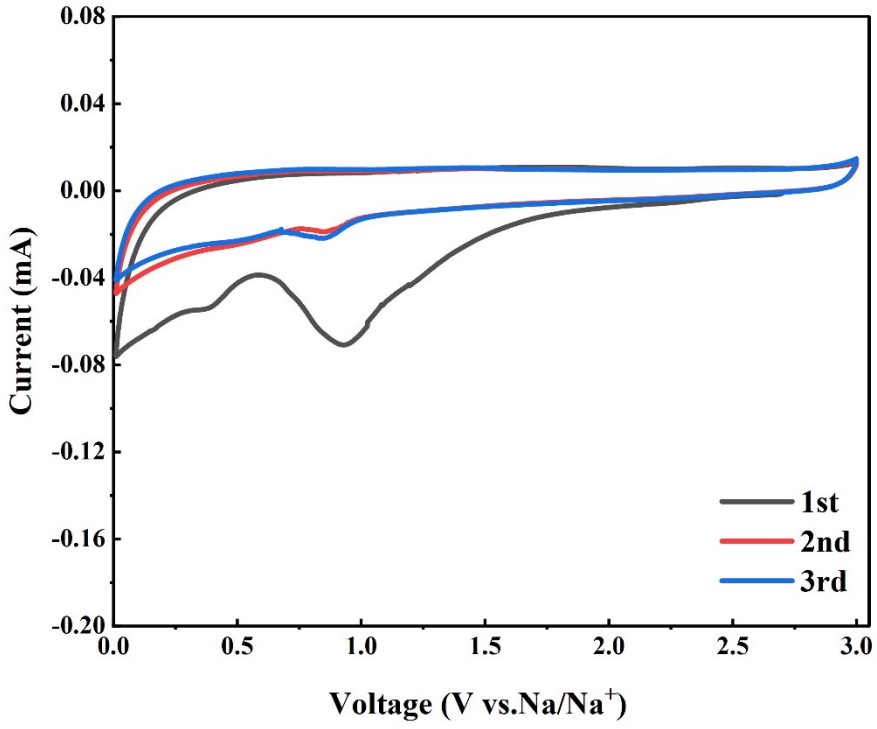

Figure. S2. CV curves of MXene-HF.

Element	Atomic Percentage (%)

Nb	39.45
C	30.10
O	14.43
S	6.94
Fe	9.08

Table. S1. Atomic percentages from XPS

Material	Reversible Capacity ($mAh \cdot g^{-1}$)	Rate Capability ($mAh \cdot g^{-1}$)	Cycling Stability	Ref.
S-MX (this work)	320 at 0.1 $A \cdot g^{-1}$	137.2 at 5 $A \cdot g^{-1}$	98.8 after 100 cycles at 0.5 $A \cdot g^{-1}$	This work
HF-etched Nb_2C	~60 at 0.05 $A \cdot g^{-1}$	~12.6 at 5 $A \cdot g^{-1}$	~11.8 after 100 cycles	This work (control)
HF-etched Ti_3C_2	51 at 0.05 $A \cdot g^{-1}$	~50 at 1 $A \cdot g^{-1}$	~80 after 500 cycles	*New J. Chem.*, 2023, 47, 6540
Cl-terminated Ti_3C_2 (molten	~150 at 0.1 $A \cdot g^{-1}$	~97 at 1 $A \cdot g^{-1}$	~70 after 200 cycles	*Adv. Energy Mater.* **2022**,

Material	Reversible Capacity ($mAh \cdot g^{-1}$)	Rate Capability ($mAh \cdot g^{-1}$)	Cycling Stability	Ref.
salt)				*12*, 2202052

Table. S2. Comparison with Reported MXene-Based Anodes.