

## Supporting Information

### **Effect of post-etch annealing gas composition on the structural and electrochemical properties of $Ti_2CT_x$ MXene electrodes for supercapacitor applications**

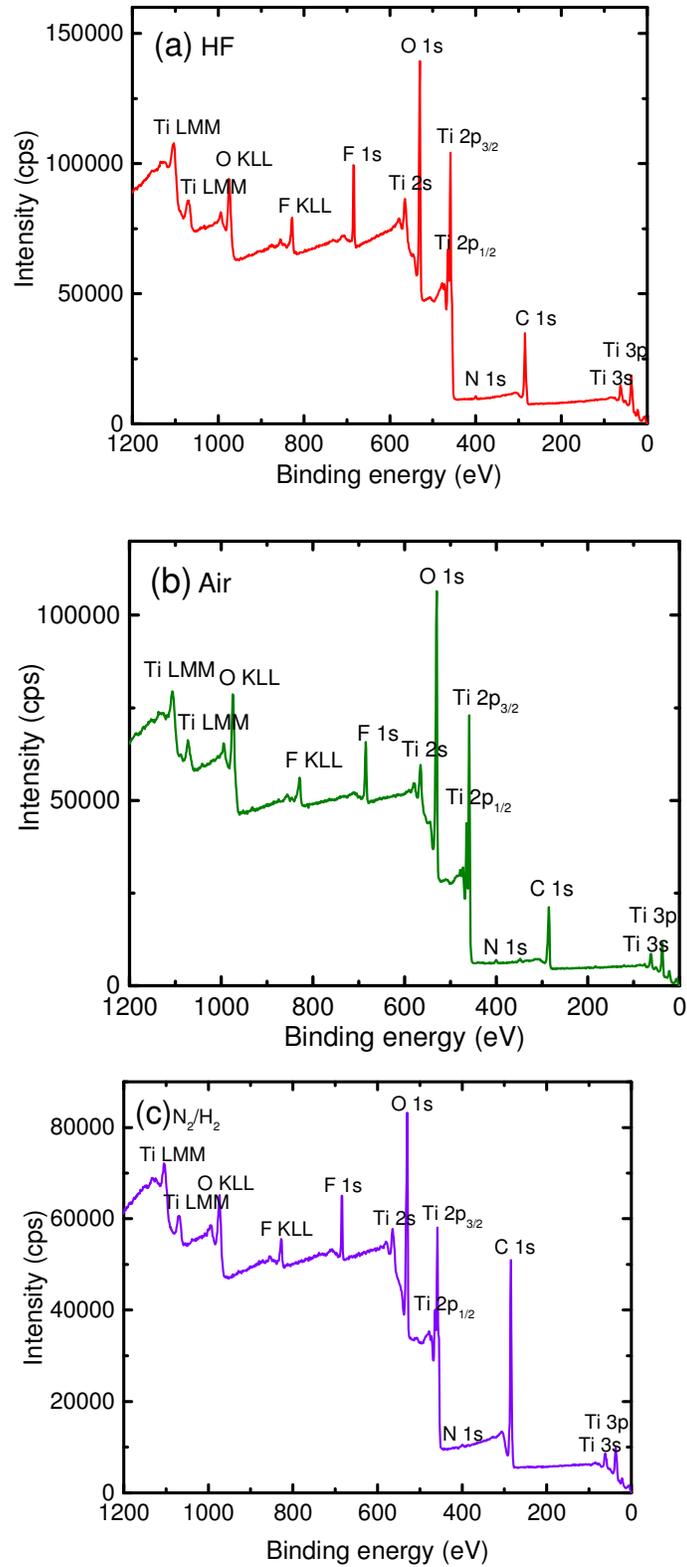
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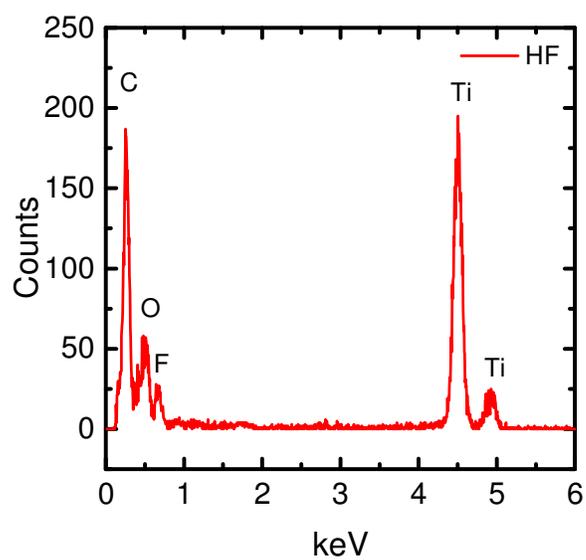
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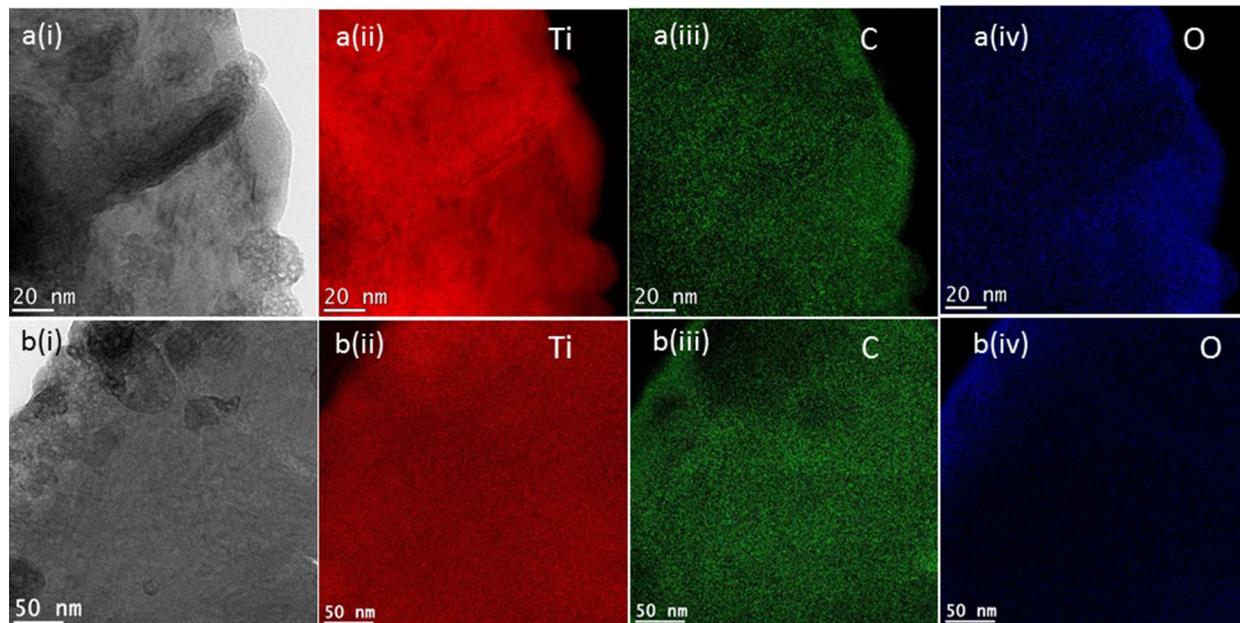
Phone: Office: +966-(0)2-808-4477 | Cell: +966-(0)5-44700037



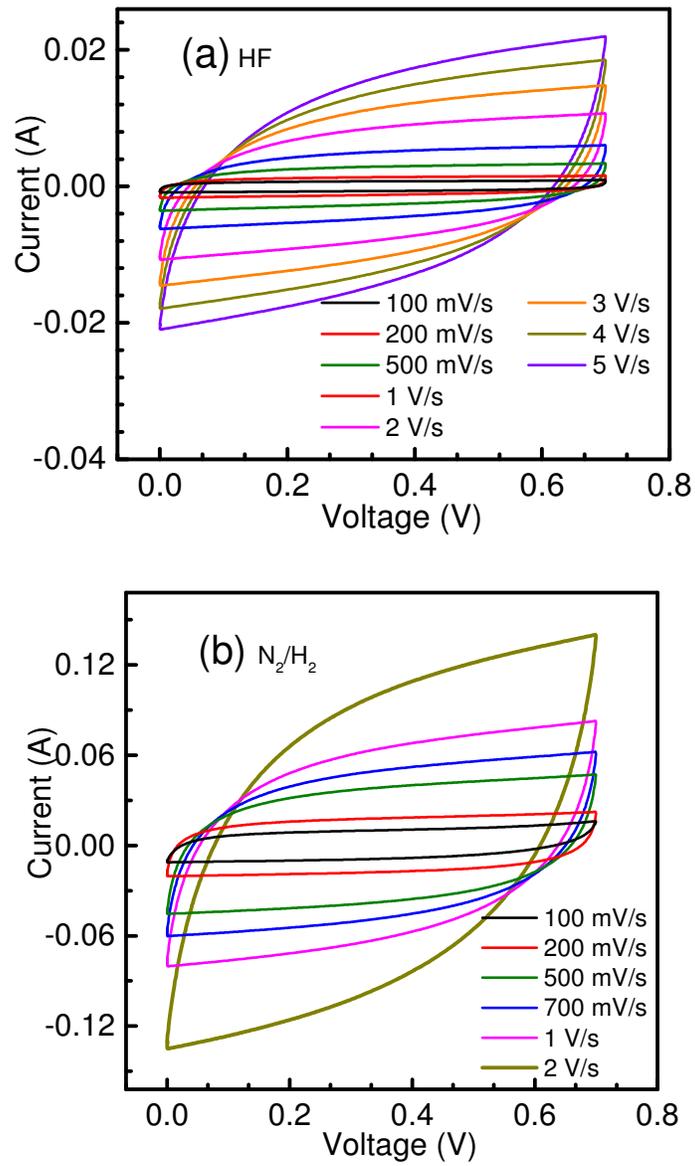
**Figure S1:** XPS survey spectra of (a) HF treated MAX Phase, (b) MXene sample annealed in air, and (c) MXene sample annealed in N<sub>2</sub>/H<sub>2</sub> atmosphere.



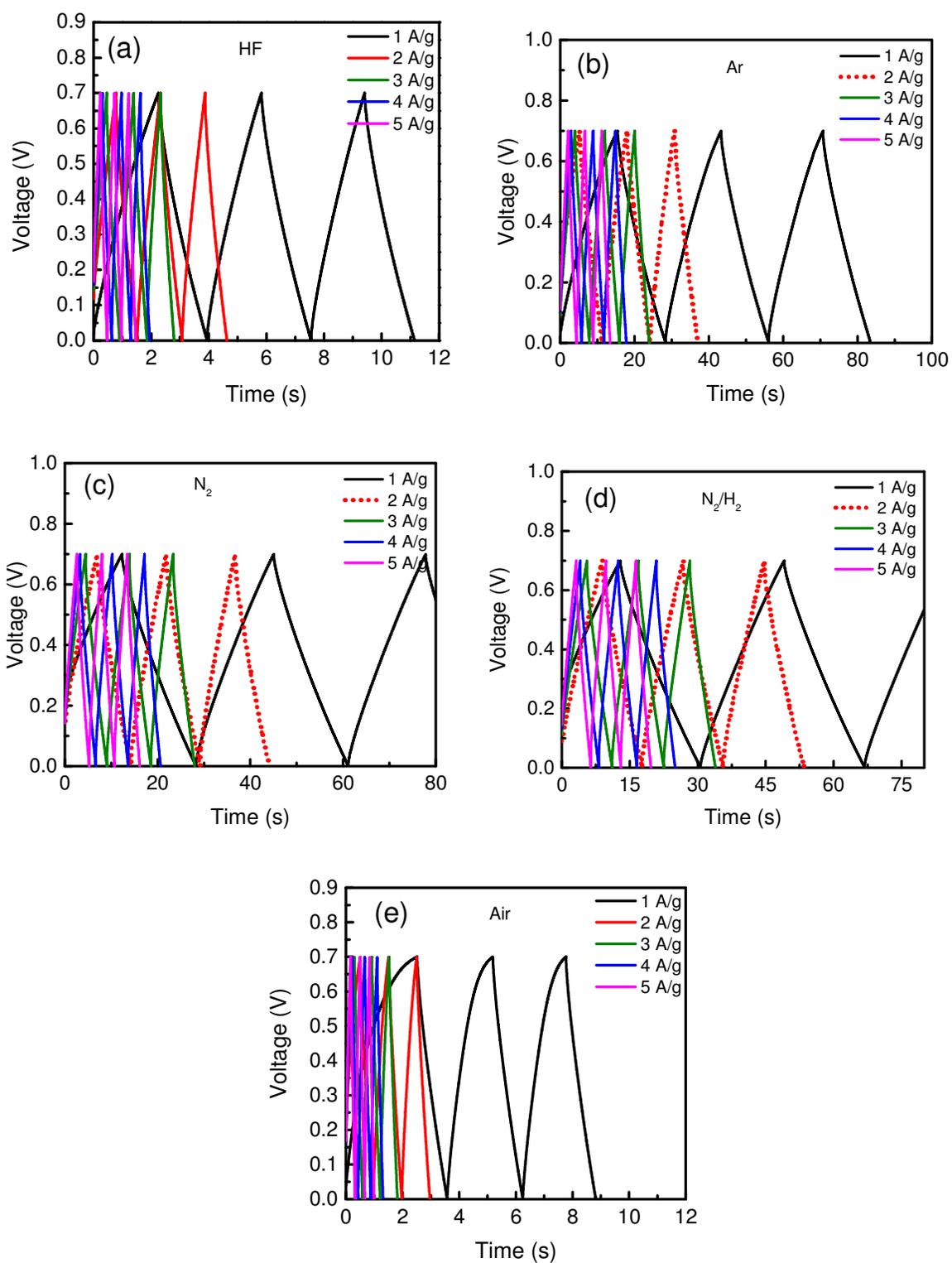
**Figure S2:** EDAX pattern of HF treated MAX Phase.



**Figure S3:** Elemental mapping of (a) HF treated MAX Phase and (b) MXene sample annealed in N<sub>2</sub>/H<sub>2</sub> atmosphere.



**Figure S3:** Cyclic Voltammograms of (a) HF treated MAX Phase and (b) MXene sample annealed in N<sub>2</sub>/H<sub>2</sub> atmosphere at higher scanrates.



**Figure S5:** Galvanostatic charge-discharge curves of (a) HF treated MAX Phase and MXene samples annealed in (b) Ar, (c) N<sub>2</sub>, (d) N<sub>2</sub>/H<sub>2</sub>, and (e) air atmosphere.