

[Supporting Information]

**H₂O₂ Assisted Room Temperature Oxidation of Ti₂C MXene for Li-ion
Battery Anodes**

Bilal Ahmed¹, Dalaver H. Anjum¹, Mohamed N. Hedhili¹, Yury Gogotsi² and

Husam N. Alshareef^{1,*}

¹Materials Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal, 23955–6900, Saudi Arabia

²Department of Materials Science and Engineering, and A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA, 19104, USA

*Corresponding author: husam.alshareef@kaust.edu.sa

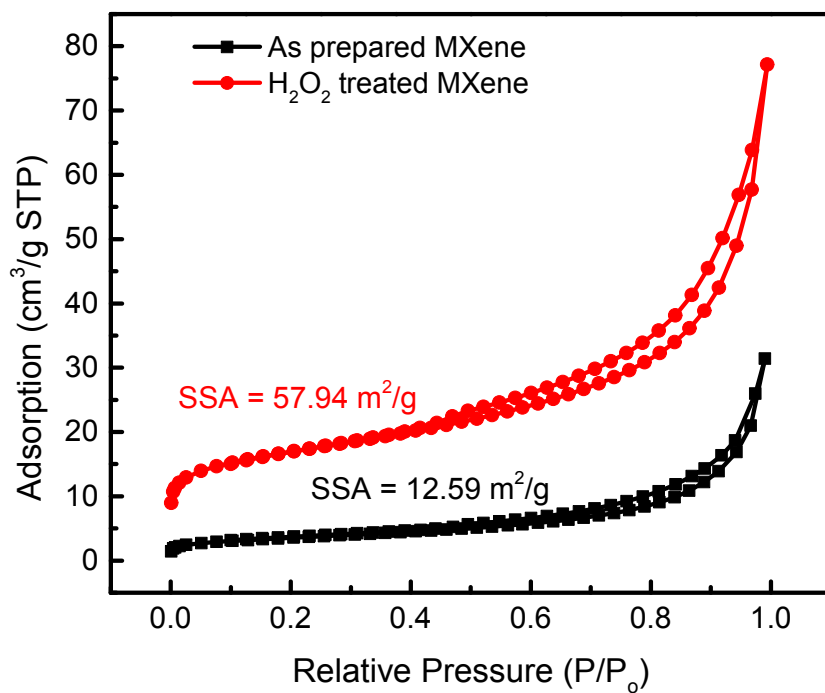


Figure S1 Nitrogen adsorption–desorption isotherms for as-prepared Ti₂CT_x and H₂O₂ treated MXene (immersion time ≈ 5 minutes)

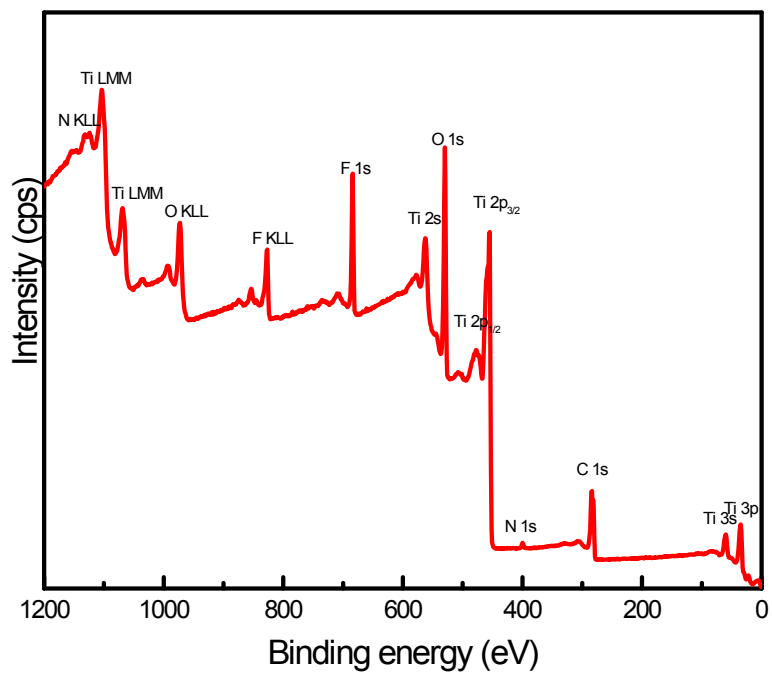


Figure S2 XPS survey spectrum of as-prepared Ti_2CT_x

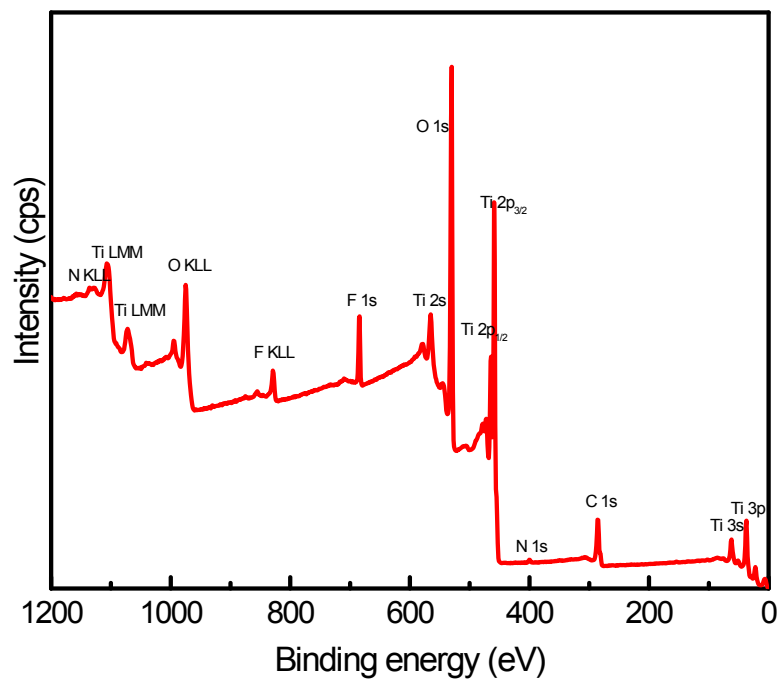


Figure S3 XPS survey spectrum of H_2O_2 treated Ti_2CT_x (immersion time \approx 5 minutes)

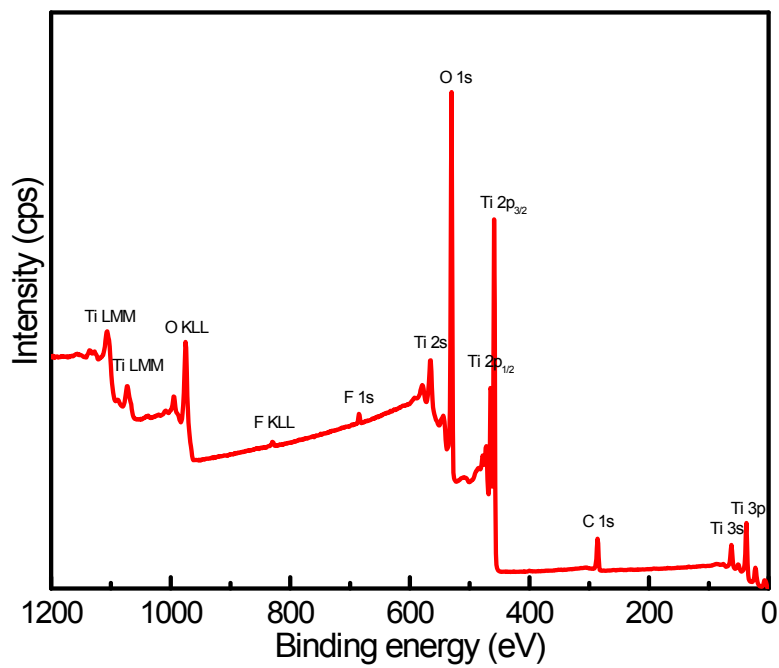


Figure S4 XPS survey spectrum of H₂O₂ treated MXene (immersion time \approx 5 hours)

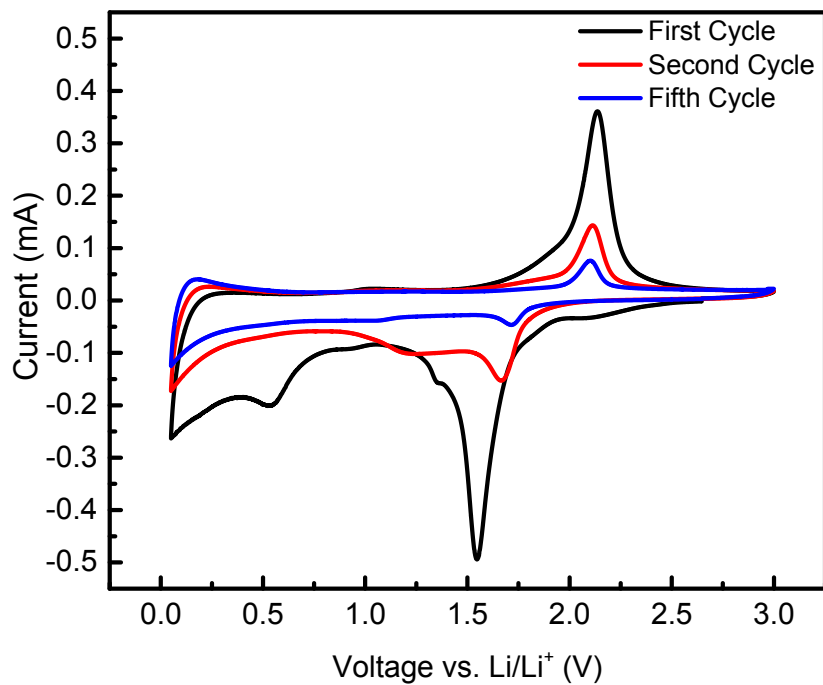


Figure S5 Cyclic voltammetry curves of H₂O₂ treated Ti₂CT_x (immersion time \approx 5 hours) at the scan rate of 0.2 mV/s