

Supporting Information

***In Situ* Environmental Transmission Electron Microscopy Study of Oxidation of Two-Dimensional Ti_3C_2 and Formation of Carbon-Supported TiO_2**

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Scanning Electron Microscopy and Energy-Dispersive Spectroscopy

Energy-dispersive spectroscopies (EDS) of the flash heated and slow heated samples were obtained using Zeiss Supra 50VP.

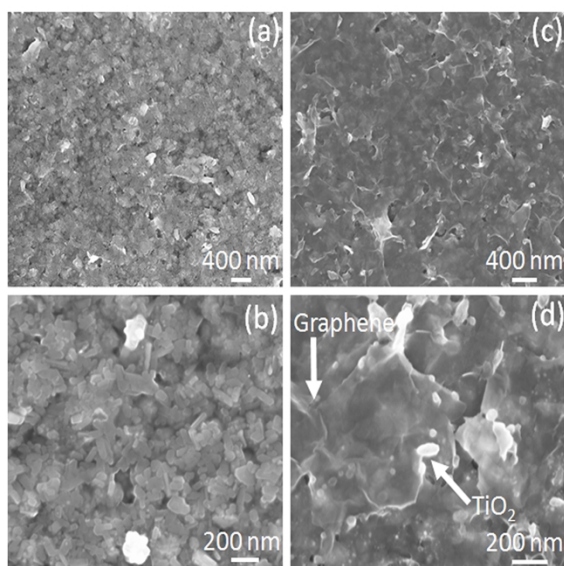


Figure S1 Scanning electron microscopy images of the samples produced by slow heating (a)-(b) and flash heated (c)-(d) oxidation of $Ti_3C_2T_x$ taken at different magnifications.

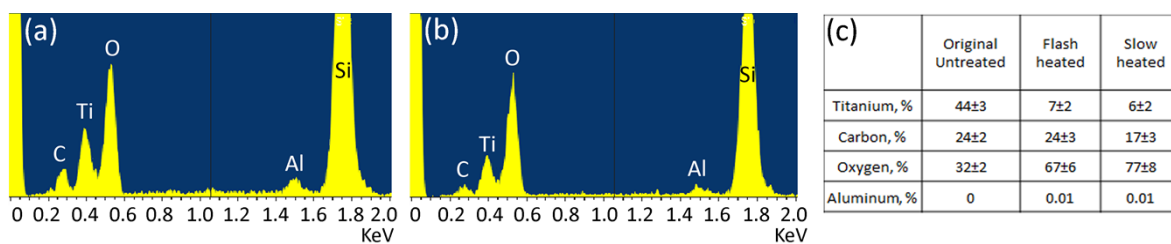


Figure S2 Energy dispersive spectra representing the elemental compositions of oxidized samples. (a) Flash oxidized sample shows a high oxygen content, which indicates formation of TiO_2 , while a lower carbon content in the slowly heated sample (b) revealed oxidation/burning of carbon in the pristine sample.