Electronic Supplementary Information for

Three-dimensional polyaniline architecture enabled by hydroxyl-terminated Ti$_3$C$_2$T$_x$ MXene for high-performance supercapacitor electrodes

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Fig. S1 XRD patterns of Ti₃AlC₂ before NaOH etching processes and etched Ti₃AlC₂ after NaOH etching processes.

Fig. S2 SEM image, EDS spectra and element mapping distributions of Ti₃AlC₂ before NaOH etching processes.
Fig. S3 SEM image, EDS spectra and element mapping distributions of etched Ti$_3$AlC$_2$ after NaOH etching processes.

Fig. S4 Comparison of electrochemical performance for all the samples: (a) CV curves at 10 mV s$^{-1}$. (b) GCD curves at 1 A g$^{-1}$. 
Fig. S5 The determination of capacitive contributions for PANI at (a) 10, (b) 20, (c) 30,
(d) 40 and (e) 50 mV s⁻¹.
Fig. S6 The determination of capacitive contributions for PANI/P-TiC2Tx at (a) 10, (b) 20, (c) 30, (d) 40 and (e) 50 mV s⁻¹.
Fig. S7 The determination of capacitive contributions for PANI/H-TiC$_2$Tx at (a) 10, (b) 20, (c) 30, (d) 40 and (e) 50 mV s$^{-1}$. 
Fig. S8 The optimization of PANI/H-Ti$_3$C$_2$Tx with different mass ratio of PANI in composites: (a) TG curves. (b) GCD curves.

Fig. S9 Galvanostatic charge-discharge tests of PANI and PANI/Ti$_3$C$_2$Tx at various current densities: (a) GCD curves of PANI. (b) GCD curves of PANI/P-Ti$_3$C$_2$Tx. (c) GCD curves of PANI/H-Ti$_3$C$_2$Tx. (d) Comparison of specific capacitances at different current densities.