Electronic Supplementary Information for

Three-dimensional polyaniline architecture enabled by hydroxyl-terminated $Ti_3C_2T_x$ MXene for high-performance supercapacitor electrodes

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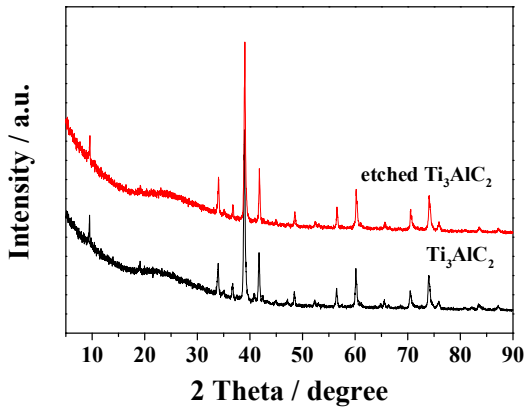

Fig. S1 XRD patterns of Ti_3AlC_2 before NaOH etching processes and etched Ti_3AlC_2 after NaOH etching processes.

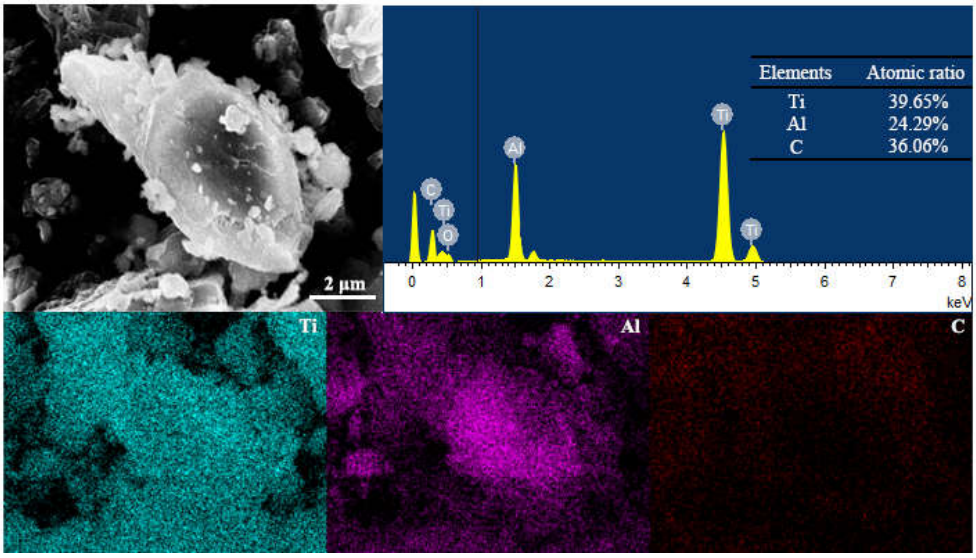

Fig. S2 SEM image, EDS spectra and element mapping distributions of Ti_3AlC_2 before NaOH etching processes.

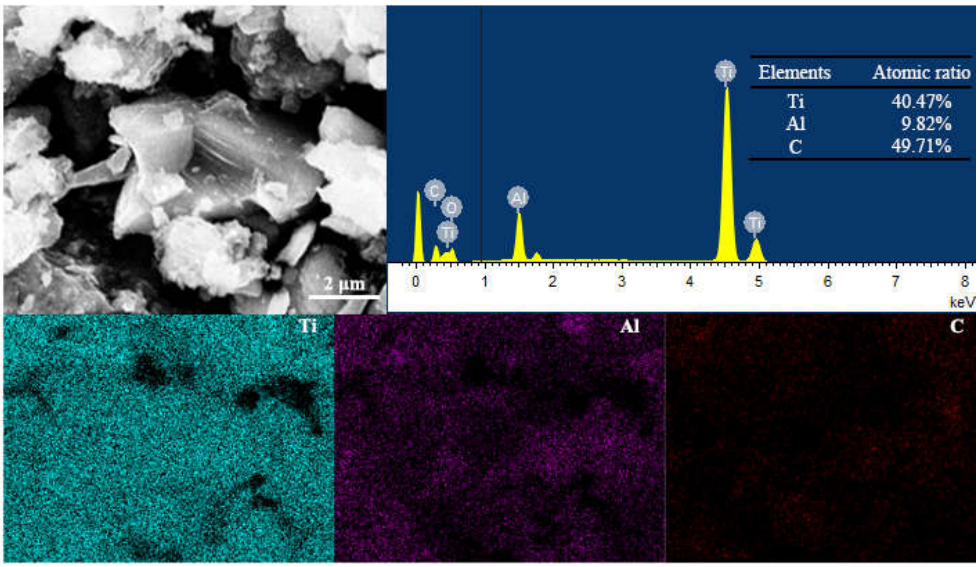

Fig. S3 SEM image, EDS spectra and element mapping distributions of etched Ti_3AlC_2 after NaOH etching processes.

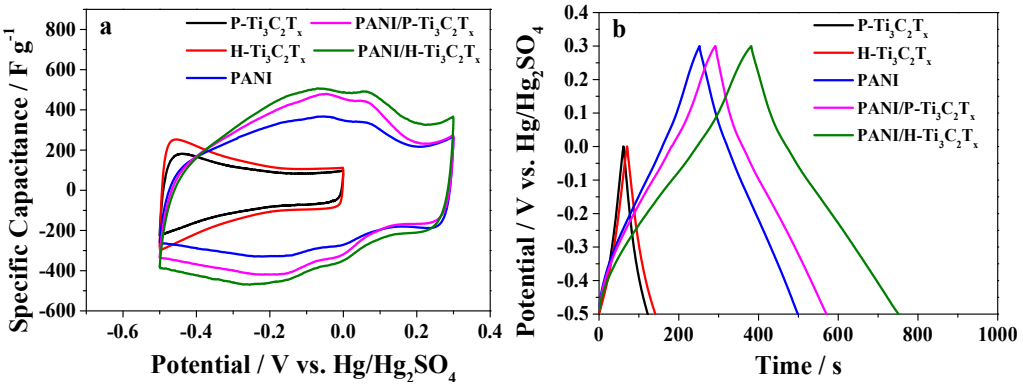

Fig. S4 Comparison of eletrochemical performance for all the samples: (a) CV curves at 10 mV s^{-1}. (b) GCD curves at 1 A g^{-1}.

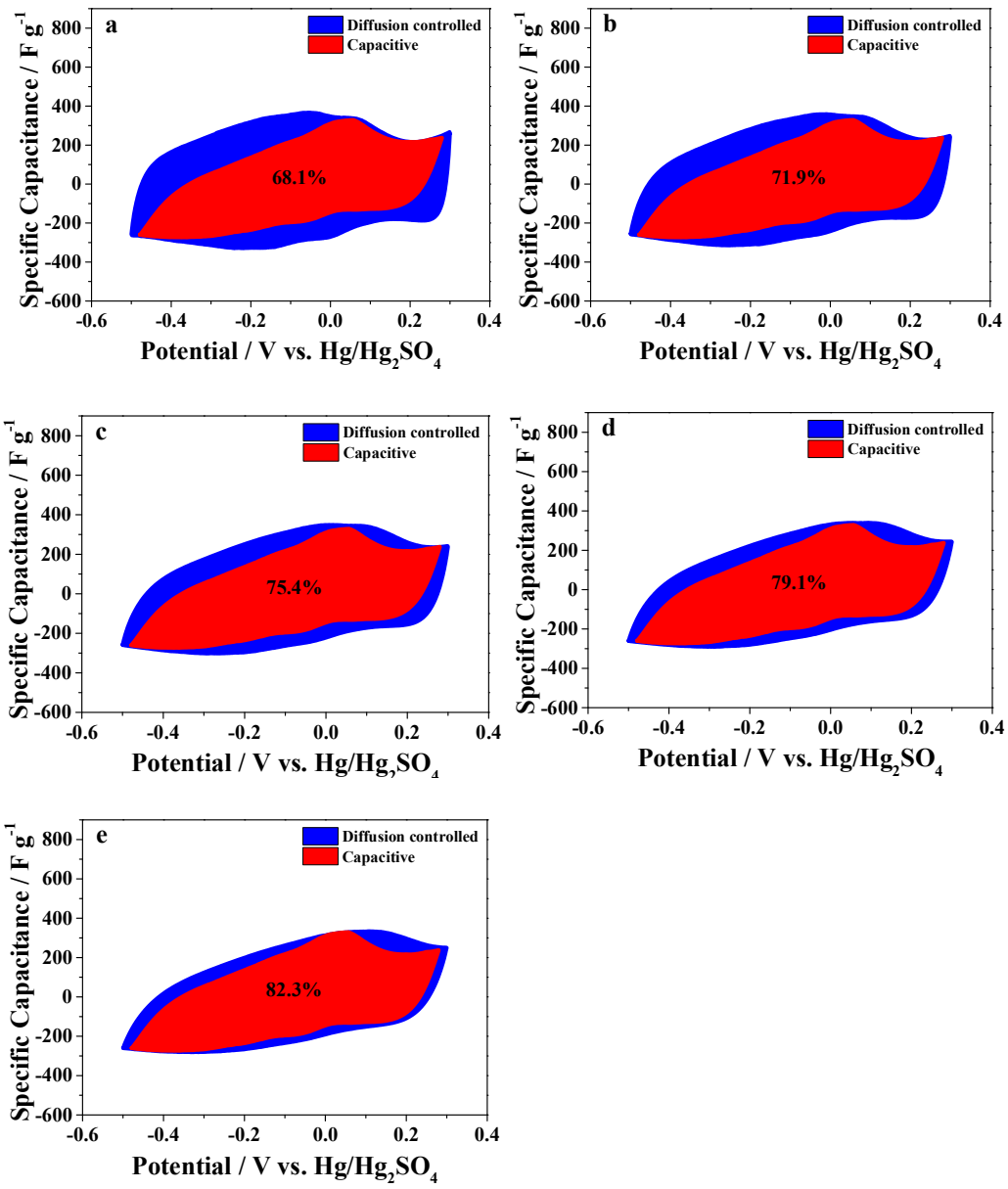

Fig. S5 The determination of capacitive contributions for PANI at (a) 10, (b) 20, (c) 30, (d) 40 and (e) 50 mV s^{-1}.

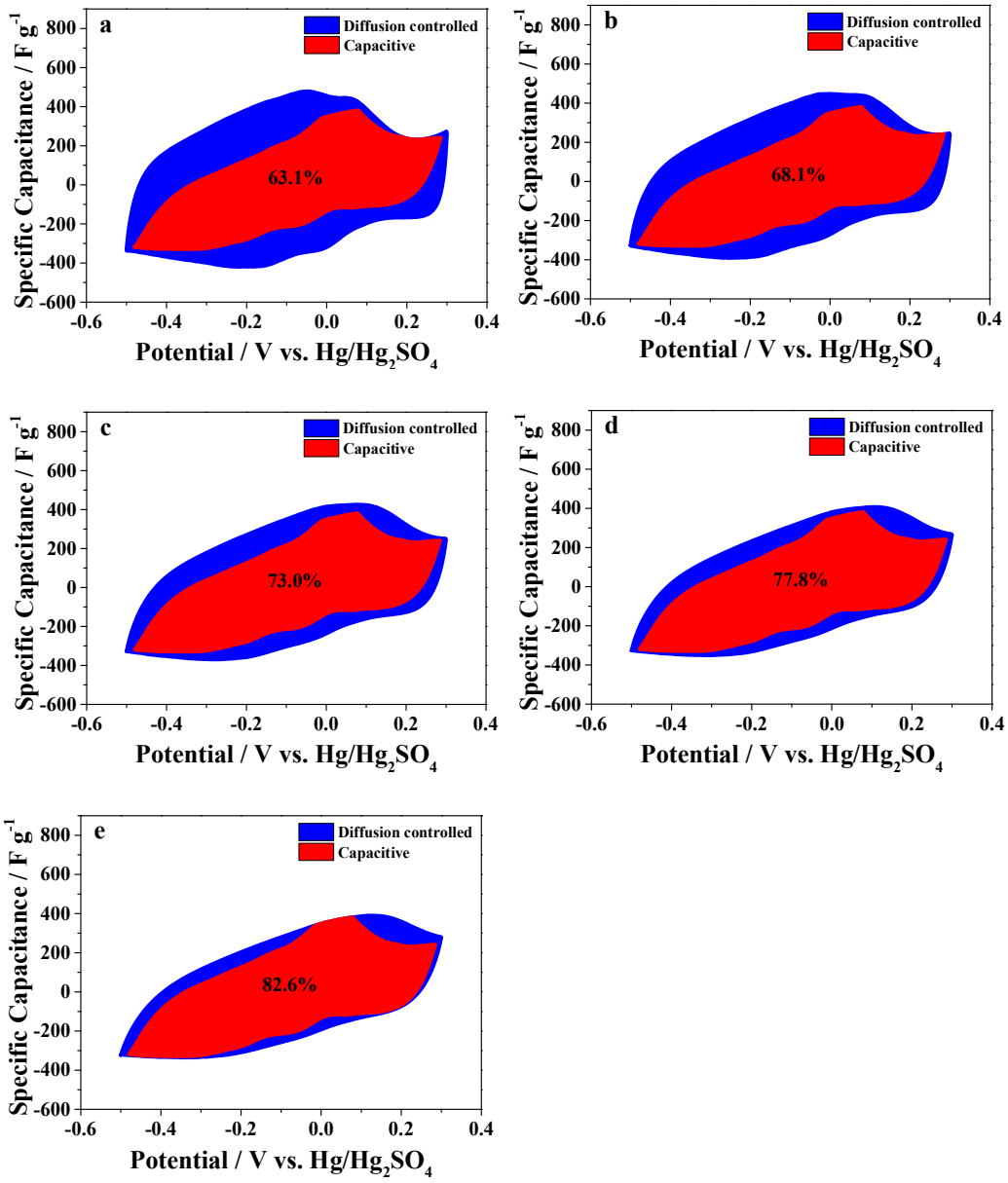

Fig. S6 The determination of capacitive contributions for PANI/P-$Ti_3C_2T_x$ at (a) 10, (b) 20, (c) 30, (d) 40 and (e) 50 mV s^{-1}.

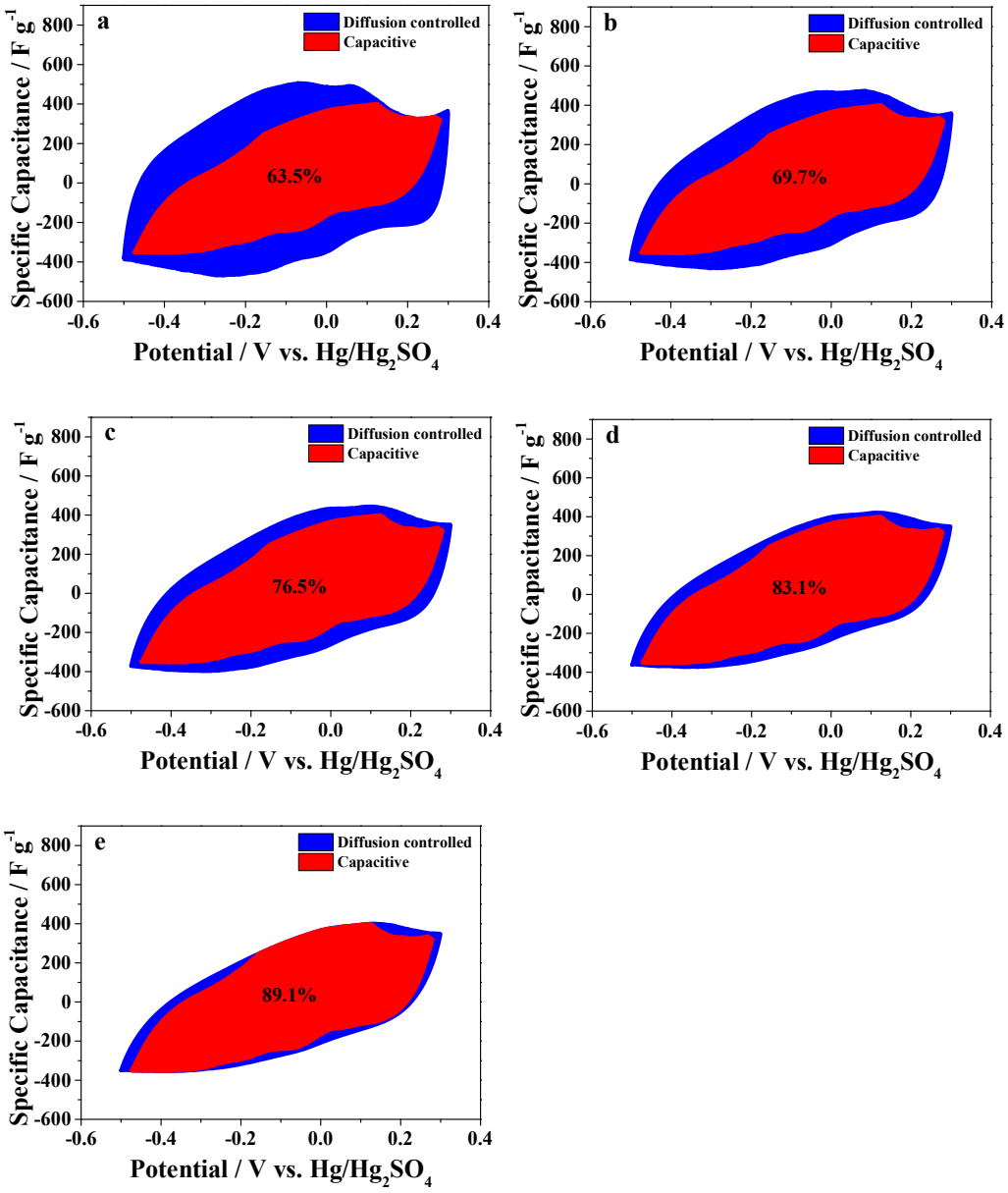

Fig. S7 The determination of capacitive contributions for PANI/H-$Ti_3C_2T_x$ at (a) 10, (b) 20, (c) 30, (d) 40 and (e) 50 mV s^{-1}.

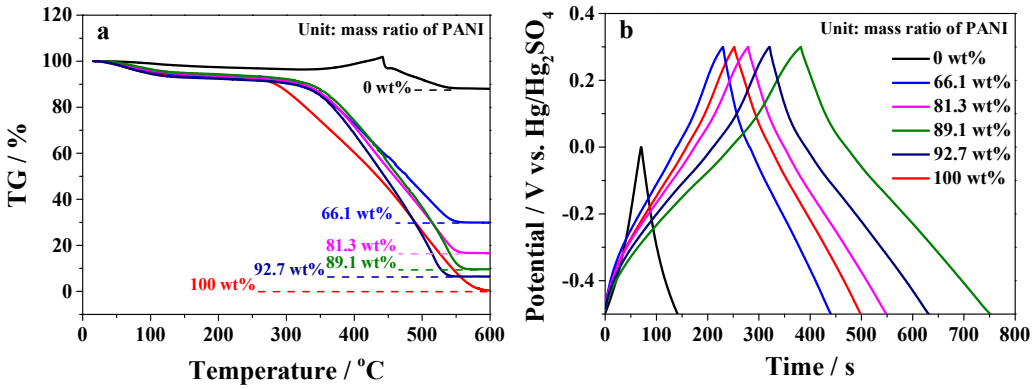

Fig. S8 The optimization of PANI/H-$Ti_3C_2T_x$ with different mass ratio of PANI in composites: (a) TG curves. (b) GCD curves.

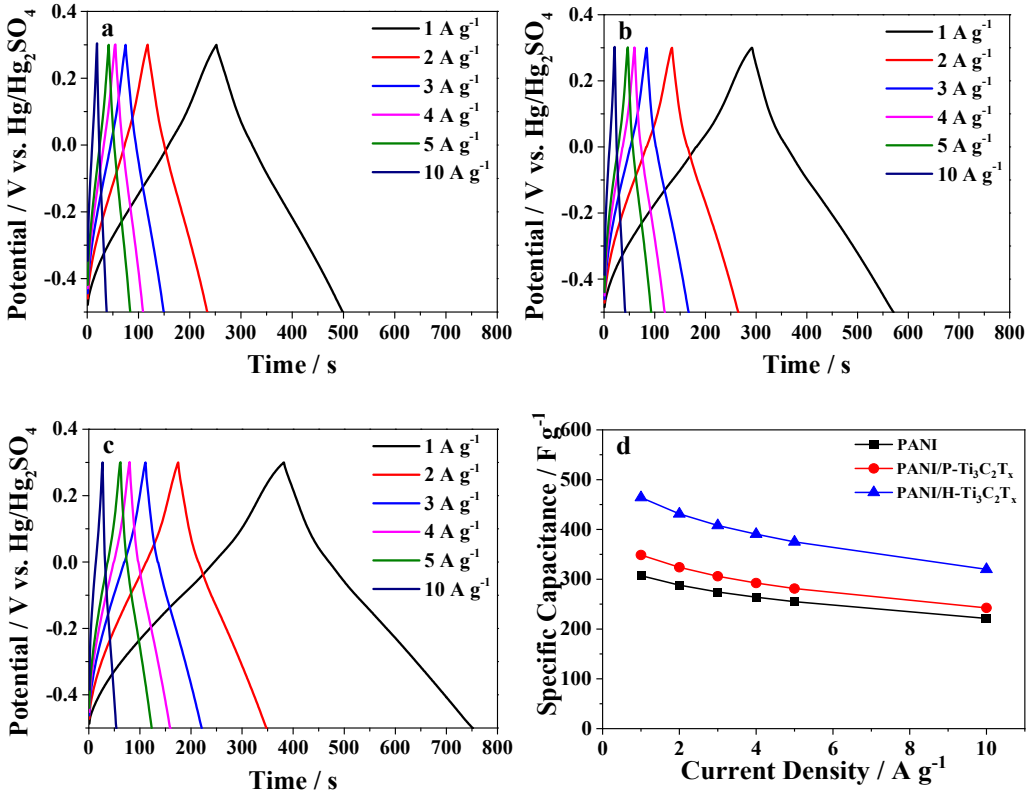

Fig. S9 Galvanostatic charge-discharge tests of PANI and PANI/$Ti_3C_2T_x$ at various current densities: (a) GCD curves of PANI. (b) GCD curves of PANI/P-$Ti_3C_2T_x$. (c) GCD curves of PANI/H-$Ti_3C_2T_x$. (d) Comparison of specific capacitances at different current densities.