3D N-Ti$_3$C$_2$Tx/Co/N-CNT Composites as a Sodiophilic Framework for Dendrite-Free Sodium Metal Anodes

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Fig. S1 SEM image of Ti$_3$AlC$_2$. 
Fig. S2 (a-b) SEM images of Ti$_3$C$_2$Tx/Co hybrids.
Fig. S3 (a-b) SEM images of Ti$_3$C$_2$T$_x$/Fe hybrids.
Fig. S4 (a-b) SEM images of Ti$_3$C$_2$T$_x$/Ni hybrids.
Fig. S5 Cl 2p XPS spectra of TCC composites.
Fig. S6 (a) Co 2p XPS spectra of TCC. (b) Ni 2p XPS spectra of TNC.

The Co 2p spectrum exhibits three sets of peaks including Co$^{3+}$ (781.1/797.2 eV), Co$^{2+}$ (782.6/798.7 eV) and satellite peaks (786.8/804.0 eV) (Fig. S6a).[1] The Ni 2p spectra contains six peaks: Ni$^{2+}$ 2p$_{3/2}$ / Ni$^{2+}$ 2p$_{1/2}$ (854.0/872.1 eV), Ni$^{3+}$ 2p$_{3/2}$ / Ni$^{3+}$ 2p$_{1/2}$ (855.7/874.0 eV) and satellite peaks (861.0/879.9 eV) (Fig. S6b).[2]

References


Fig. S7 Cl elemental mapping image of TCC hybrids.
Fig. S8 EIS spectra of the asymmetric cell with Ti$_3$C$_2$T$_x$/Co electrode before cycling.
Fig. S9 Voltage-capacity curves of (a) Cu and (b) TCC electrode under different cycles at 2 mA cm$^{-2}$ and 4 mAh cm$^{-2}$.
Fig. S10 SEM images of (a) TCC electrode and (b) bare Cu foil before Na deposition.
Fig. S11 (a-b) Light emitting diode panel powered by TCC-Na//NVP full cells.