Supplementary Material

Facile Synthesis of $NiCo_2O_4$ Nanowire Arrays/Few-Layered Ti_3C_2-MXene Composite as Binder-Free Electrode for High-Performance Supercapacitors

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Figure S1. SEM images of (a) Ti_3AlC_2, (b) accordion-like Ti_3C_2.

Figure S2. XRD patterns of Ti_3AlC_2 and Ti_3C_2.

Figure S3. (a-b) SEM images of $NiCo_2O_4/Ti_3C_2$.

Figure S4. SEM image of pure $NiCo_2O_4$.

Table S1. Electrochemical performances of carbon based electrodes and metal oxides/sulfides based electrodes and electrodes with similar morphology for supercapacitor application in a three-electrode system.

Electrode material	Electrolyte	Potential (V)	Capacitance	Rate capability	Ref
$Ti_3C_2T_x/NiCo_2S_4$@CC	6 M KOH	0–0.7	2326 F g^{-1} at 1 A g^{-1}	66.3% (15 A g^{-1})	[48]
P-Ti_3C_2@$NiCo_2S_4$	3 M KOH	−0.1–0.4	973 F g^{-1} at 1 A g^{-1}	_	[49]
Ti_3C_2/Ni-Co-Al-LDH	1 M KOH	−0.2–0.5	1990 F g^{-1} at 1 A g^{-1}	_	[50]
$NiCo_2O_4$@rGO/ACF	3 M KOH	−0.2–0.6	1487 F g^{-1} at 3 mA cm^{-2}	60.45% (70 mA cm^{-2})	[51]
NHCS/Ni_2CoS_4	2 M KOH	0–0.5	1465 F g^{-1} at 0.5 A g^{-1}	57.33% (8 A g^{-1})	[52]
N/S-doped porous carbons	6 M KOH	−1–0	318 F g^{-1} at 0.5 A g^{-1}	71.7% (30 A g^{-1})	[53]
V/$Co_{0.85}Se$	3 M KOH	0–0.6	1.28 mA h cm^{-2} at 5 mA cm^{-2}	60.2% (30 mA cm^{-2})	[54]
MnO_2@$SrCo_{0.875}Nb_{0.125}O_3$@CC	0.5 M $MnCl_2$ and 0.5 M KNO_3	−0.4–0.6	2066.0 mF cm^{-2} at 2 mA cm^{-2}	59.2% (6 mA cm^{-2})	[55]
Gd-doped CeOx/C	1M KOH	0–1	280 F g^{-1} at 0.33A g^{-1}	_	[56]
Co_3O_4/CC	1M NaOH	0–1	106 F g^{-1} at 500 mV s^{-1}	_	[57]
$NiCo_2O_4/Ti_3C_2$	**6 M KOH**	**0–0.6**	**2468 F g^{-1} at 0.5 A g^{-1}**	**72% (10 A g^{-1})**	**This work**

Figure S5. (a-b) CV and GCD curves at various potential windows, (c) CV curves at various scan rates, (d) GCD curves at various current densities of AC/NF.

Figure S6. (a-b) CV and GCD curves of ACS at various potential windows.

Figure S7. (a-b) morphology before and after 10,000 cycles of $NiCo_2O_4/Ti_3C_2$.