Supplementary Information

NiCo$_2$O$_4$/NiCoP nanoflake-nanowire arrays: a homogeneous heterogeneous structure for high performance asymmetric hybrid supercapacitors

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**Figure S1** Photographs of nickel foam substrate, Ni-Co precursor on nickel foam and NiCo$_2$O$_4$/NiCoP-500 on Ni foam.

**Figure S2** SEM micrographs of (a, b) pure Ni foam, (c) NiCo$_2$O$_4$/NiCoP-200, (d) NiCo$_2$O$_4$/NiCoP-1000, (e) NCO-6h and (f) NCO-9h.
Figure S3 TEM of (a) NiCo$_2$O$_4$ (b) NiCo$_2$O$_4$/NiCoP-200 (c) NiCo$_2$O$_4$/NiCoP-1000 (d) NiCo$_2$O$_4$/NiCoP-1500.

Figure S4 TEM EDS result of NiCo$_2$O$_4$/NiCoP-200
Figure S5 GCD curves of (a) NiCo$_2$O$_4$ (b) NiCo$_2$O$_4$/NiCoP-200 (c) NiCo$_2$O$_4$/NiCoP-1000 (d) NiCo$_2$O$_4$/NiCoP-1500 electrode at different current densities.

Figure S6 CV curves of NiCo$_2$O$_4$/NiCoP-500 and pure Ni foam at the scan rates of 10 mV s$^{-1}$.

Figure S7 SEM images of the (a) NiCo$_2$O$_4$; (b) NiCo$_2$O$_4$/NiCoP-500; (c) NiCo$_2$O$_4$/NiCoP-1500 after 2000 cycles.
Figure S8 The electrochemical performance of NiCo$_2$O$_4$/AC, NiCo$_2$O$_4$/NiCoP-200//AC, NiCo$_2$O$_4$/NiCoP-1000//AC, and NiCo$_2$O$_4$/NiCoP-1500//AC: (a, d, g and j) CV curves in different potential ranges at a scan rate of 30 mV s$^{-1}$; (b, e, h and k) CV curves at different scan rates; (c, f, i and l) GCD curves at different current densities.