Supporting Information

Three-Dimensional NiCo$_2$O$_4$@NiMoO$_4$ Core/Shell Nanowire for Electrochemical Energy Storage

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Fig. S1 (a) Typical XRD patterns of the NiCo$_2$O$_4$ NWAs (b) XRD pattern of the NiCo$_2$O$_4$@NiMoO$_4$ (4h) core/shell composite scratched from Ni foam.
Fig. S2 (a–d) SEM images of the products obtained at different reaction times: (A) 2 h, (B) 8 h, (C) 12 h, (D) 16 h
Fig. S3 (a–d) SEM images of the products obtained at different reaction temperatures:
(a) 80°C, (b) 120°C, (c) 200°C, (d) 240 °C
Fig. S4. EDX mapping of the NiCo$_2$O$_4$@NiMoO$_4$ (4h) core/shell NWAs.
Fig S5. (a) The N$_2$ adsorption–desorption isotherm of NiCo$_2$O$_4$@NiMoO$_4$ NWAs obtained after heat treatment. (b) The corresponding pore size distributions.
Fig.S6. (a) Galvanostatic charge−discharge curves of NiCo$_2$O$_4$ and NiCo$_2$O$_4$@NiMoO$_4$ at different reaction times. (b) Specific capacitance of the NiCo$_2$O$_4$@NiMoO$_4$ electrode at 10 mA cm$^{-2}$.

As the amount of active materials increased with the time increasing, while the flake structure grown on the surface connect the stick together and the real active area becomes less than before that influence the contribution of the stick structure to the capacitance. So the capacitance is reduced with the time increasing. There is almost no nanoflakes growth while the reaction time is about 2h. The specific surface area is very small and makes almost no contribution to the capacitance that makes the specific capacitance decrease.
Fig S7. The SEM of the NiCo$_2$O$_4$@NiMoO$_4$ electrode upon 5000 cycles.
Fig S8. (a-b) Cycling stability of the NiCo$_2$O$_4$@NiMoO$_4$ electrode and the full cell (5000 cycles).