Supporting Information

Nanocrystal-constructed mesoporous CoFe$_2$O$_4$ nanowire arrays aligned on flexible carbon fabric as integrated anodes with enhanced lithium storage properties

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**Fig. S1** The XRD pattern of the CoFe$_2$O$_4$ powders.

**Fig. S2** XPS survey spectra of CoFe$_2$O$_4$/carbon fabric composite.

**Fig. S3** The as-synthesized electrodes under bending.
**Fig. S4** SEM images of the carbon fabric.

**Fig. S5** Cyclic voltammograms of the CoFe$_2$O$_4$ powder pasted electrode for the initial three cycles at a scan rate of 0.1 mV s$^{-1}$ in the voltage range of 0.005-3.0 V.

**Fig. S6** Cycling performance of carbon fabric at a current density of 200 mA g$^{-1}$. 
Fig. S7 (a) Charge-discharge voltage profiles for the first five cycles and (b) cycling performance of CoFe$_2$O$_4$ powder pasted electrode at a current density of 200 mA g$^{-1}$.

Fig. S8 The charge-discharge voltage profiles of CoFe$_2$O$_4$/carbon fabric electrode at different current densities.
Table S1. Electrochemical performance of the CoFe$_2$O$_4$ NWAs/carbon fabric in this work, compared with some other CoFe$_2$O$_4$-based electrodes reported in recent literature.

<table>
<thead>
<tr>
<th>Type of material</th>
<th>Initial Specific capacity</th>
<th>Capacity decay after cycling</th>
<th>Capacity retention</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoFe$_2$O$_4$ NWAs/ carbon fabric</td>
<td>1398.74 mAh g$^{-1}$ at 200 mA g$^{-1}$</td>
<td>31.7% after 150 cycles</td>
<td>47% from 200 to 3200 mA g$^{-1}$</td>
<td>This work</td>
</tr>
<tr>
<td>Porous CoFe$_2$O$_4$ octahedral</td>
<td>1076 mAh g$^{-1}$ at 100 mA g$^{-1}$</td>
<td>35.3% after 50 cycles</td>
<td>— —</td>
<td>1</td>
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<tr>
<td>CoFe$_2$O$_4$ hierarchical flower-like microspheres</td>
<td>1179.0 mAh g$^{-1}$ at 200 mA g$^{-1}$</td>
<td>22.1% after 50 cycles</td>
<td>~44% from 100 to 1000 mA g$^{-1}$</td>
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<tr>
<td>Mesoporous CoFe$_2$O$_4$ nanospheres cross-linked by carbon nanotubes</td>
<td>1517.4 mAh g$^{-1}$ at 200 mA g$^{-1}$</td>
<td>31.1% after 100 cycles</td>
<td>54.6% from 200 to 2000 mA g$^{-1}$</td>
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<td>Co$_3$O$_4$/CoFe$_2$O$_4$ nanocomposite</td>
<td>1353.9 mAh g$^{-1}$ at 64 mA g$^{-1}$</td>
<td>33.8% after 60 cycles</td>
<td>55.8% from 64 to 1924 mA g$^{-1}$</td>
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<td>Carbon-encapsulated CoFe$_2$O$_4$/graphene</td>
<td>1453.1 mAh g$^{-1}$ at 100 mA g$^{-1}$</td>
<td>36.3% after 60 cycles</td>
<td>39.5% from 200 to 1600 mA g$^{-1}$</td>
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<tr>
<td>CoFe$_2$O$_4$/graphene sandwich</td>
<td>1174 mAh g$^{-1}$ at 200 mA g$^{-1}$</td>
<td>11% after 50 cycles</td>
<td>34.1% from 50 to 1600 mA g$^{-1}$</td>
<td>6</td>
</tr>
</tbody>
</table>

References


