

## Supporting Information

### **Hierarchical core-shell heterostructure of porous carbon nanofiber@ZnCo<sub>2</sub>O<sub>4</sub> nanoneedle arrays: Advanced binder-free electrodes for all-solid-state supercapacitors**

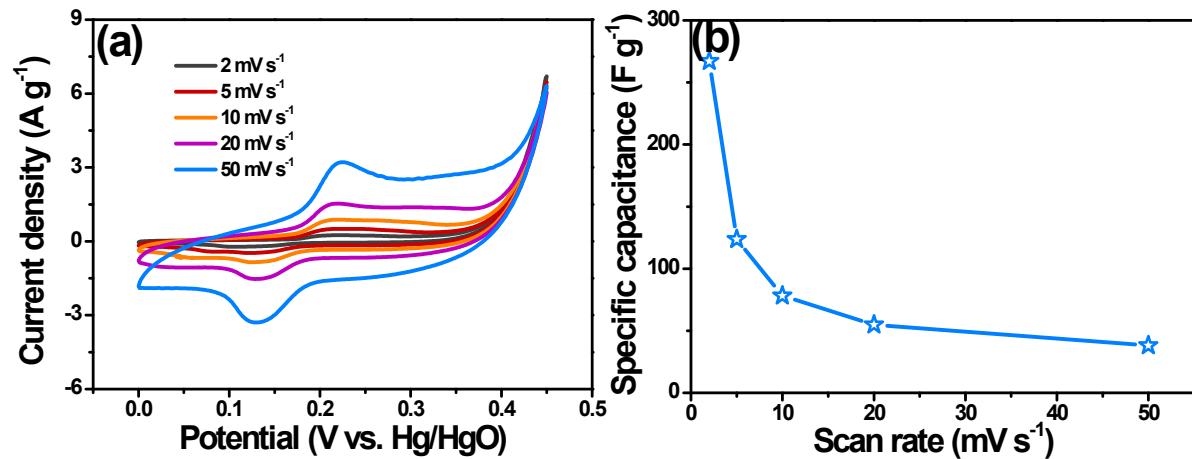
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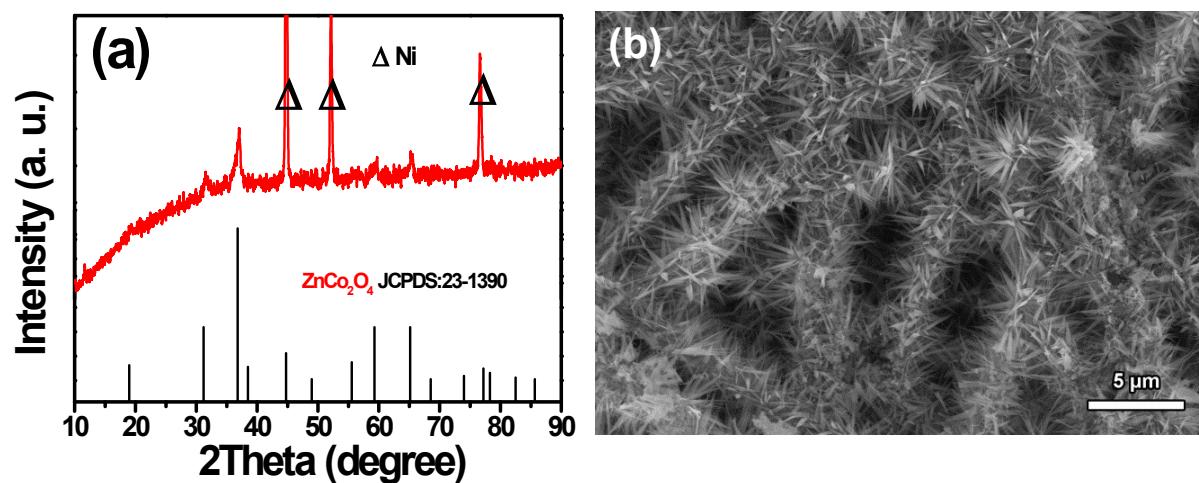
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**Fig. S1.** (a) CV curves of PCF@Co<sub>3</sub>O<sub>4</sub> electrode at various scan rates ranging from 2 to 50  $\text{mV s}^{-1}$ .

(b) Specific capacitance calculated from CV curves as a function of scan rate.



**Fig. S2.** The XRD pattern and SEM image of the PCF@ZnCo<sub>2</sub>O<sub>4</sub> heterostructures after 3000 cycles.