Supplementary Information

**Ni-Co composite metal embedded porous N-doped carbon for an effective binder-free supercapacitor electrode**

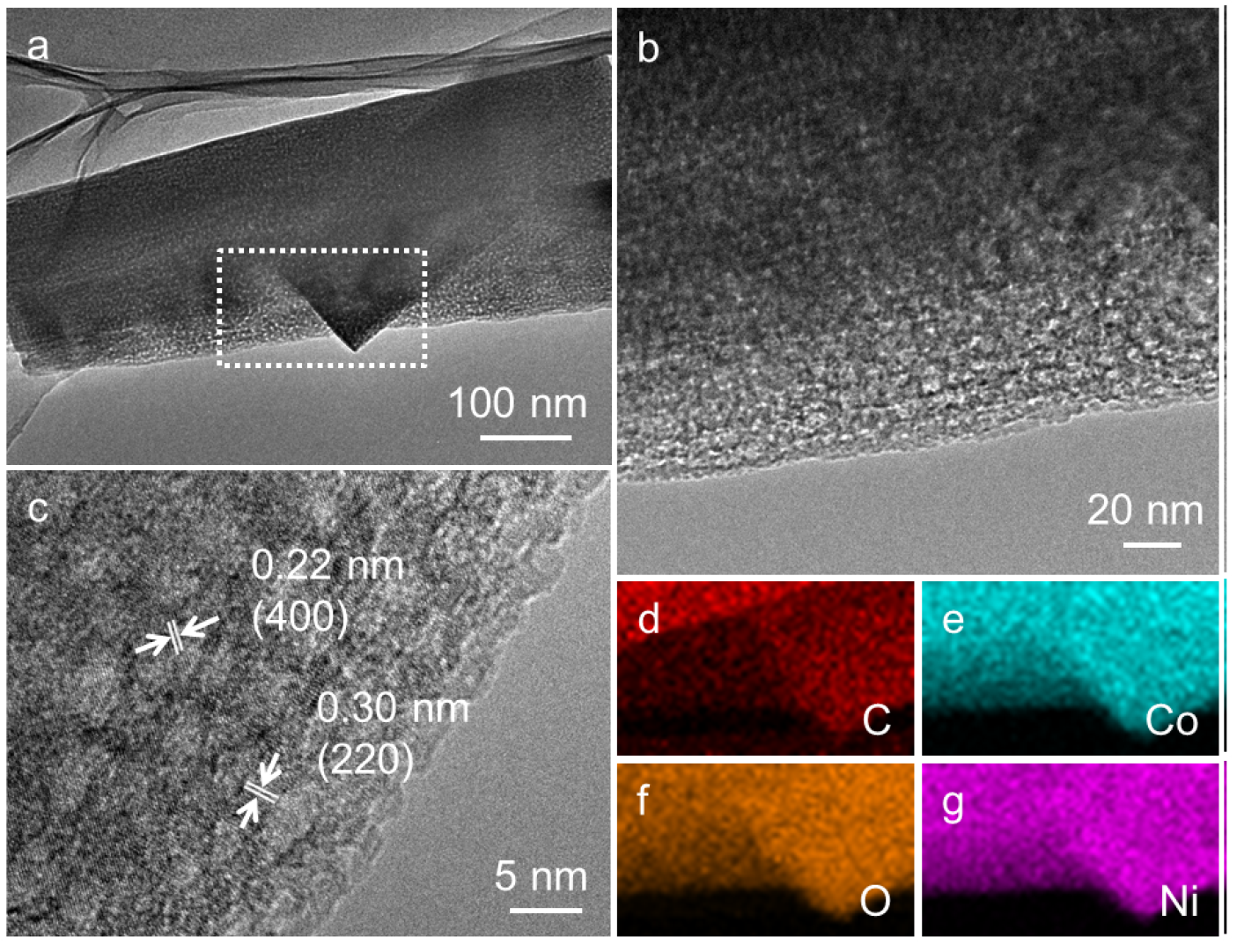
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**Calculations:**

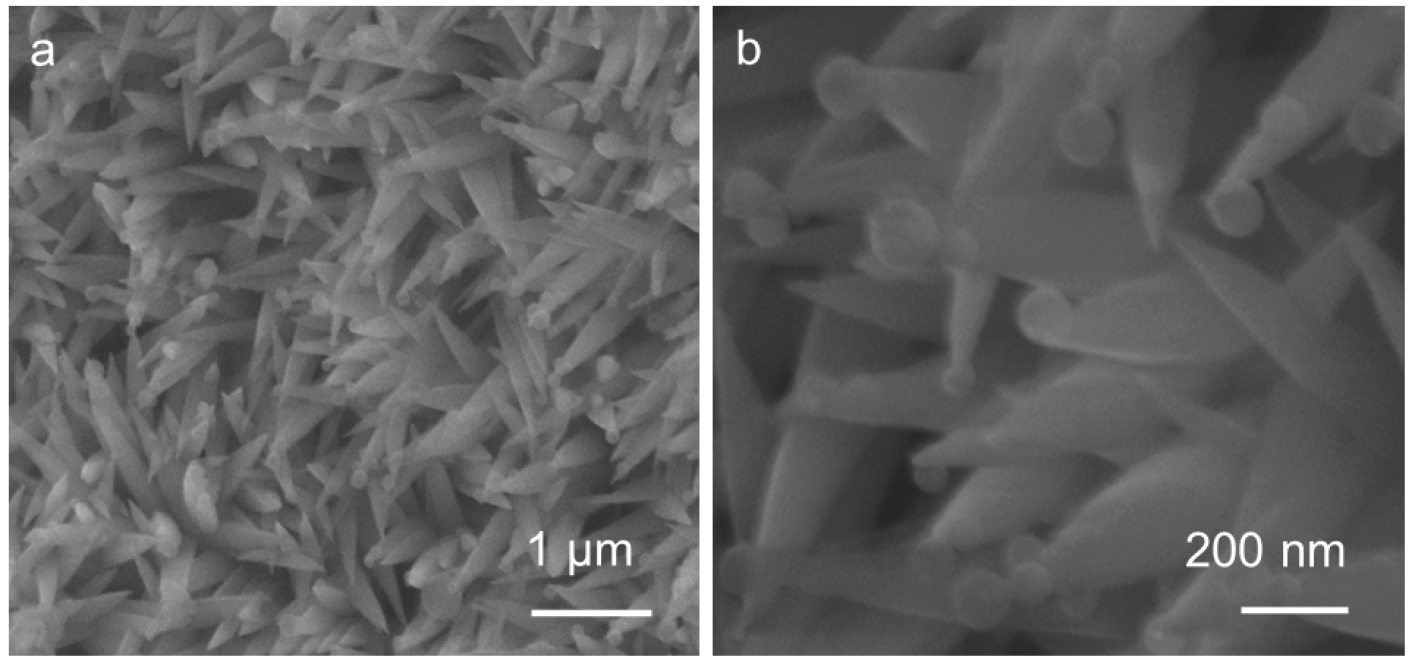
Specific capacitances of the electrodes were calculated from their CVs according to the following equation:

*C*s = = = = (1)

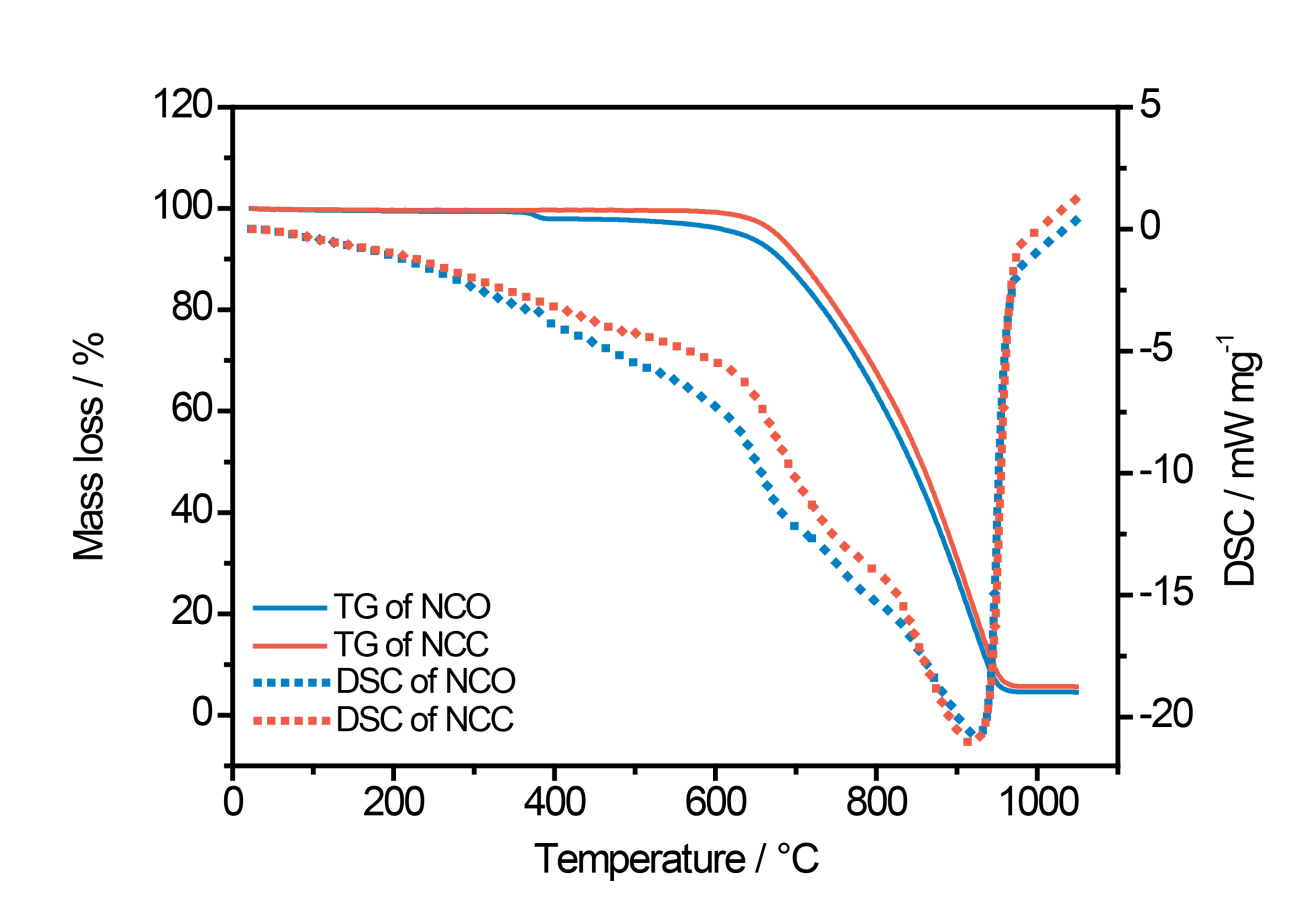
where *C*s (F/g) is the specific capacitance, *Q* (C) is the average charge during the charging and discharging process, *∆V* (V) is the potential window, Δt (s) is the charge/discharge time, I (A) is the discharge current, ν (V/s) is the scan rate, and *m* (g)is the mass loading of NCO or NCC electrode.



**Fig. S1.** (a) TEM image, (b) HRTEM image and (c) Enlarged HRTEM image of pristine NCO sample. (d-g) Elemental mappings of the selected area of NCO sample, revealing the elemental distributions of C, O, Co, and Ni.



**Fig. S2**. (a) SEM image and (b) HRSEM image of the NCO/PANI sample.



**Fig. S3**. Correspomding TG and DSC curves of the NCO and NCC electrode.

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**Fig. S4.** (a) CV curves of NCO electrode collected at various scan rates. (b) Galvanostatic charge/discharge curves of NCO electrode collected at different current densities. (c) Specific capacitance as a function of the scan rate of the NCO and NCC electrode.

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**Fig. S5**. GCD curves of (a) NCO electrode and (b) NCC electrode after different cycles. (c) Cycling performance of the NCO electrode collected at 5 mA cm-2.