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Supporting Information

Microstructure Design of Hybrid CoO@NiO and Graphene Nano-architectures for Flexible High Performance Supercapacitors

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Calculations

1. Specific capacitances derived from galvanostatic (GV) tests were calculated from Equation 2 as follows:

$$C_{sp} = \frac{It}{(\Delta V)m} \quad (1)$$

where C_{sp} (F/g), I (A), t (s), m (g) and V (V) are the specific capacitance, the discharge current, the discharge time, the mass of the active material, and the total potential window, respectively.

2. Energy density (E) and power (P) density derived from GV tests were calculated from the following equations:

$$E = \frac{1}{2}CV^2 \quad (2)$$

$$P = \frac{E}{t} \quad (3)$$

where E (Wh/kg), C (F/g), V (V), P (W/kg) and t (s) are the energy density, specific capacitance, potential window, power density, and discharge time, respectively.

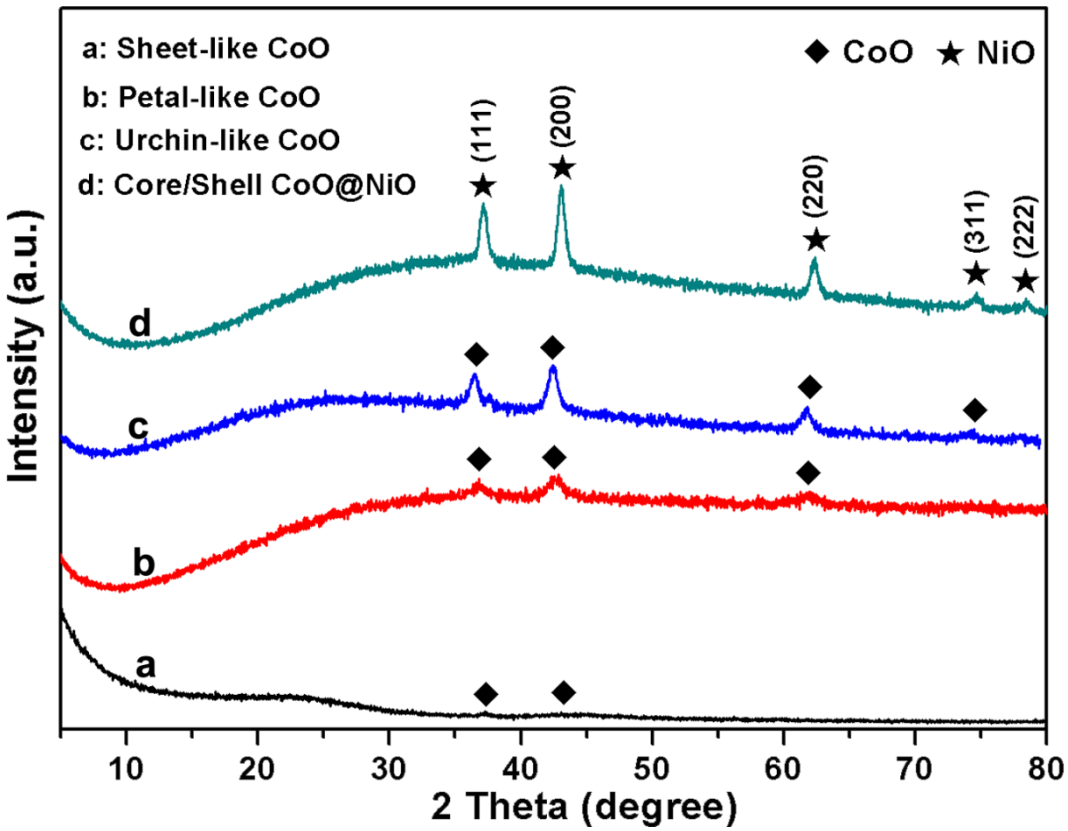

Figure S1 Typical XRD patterns of sheet-like CoO (a), petal-like CoO (b), urchin-like CoO (c) and the as-prepared hierarchical core/shell CoO@NiO nanocomposite.

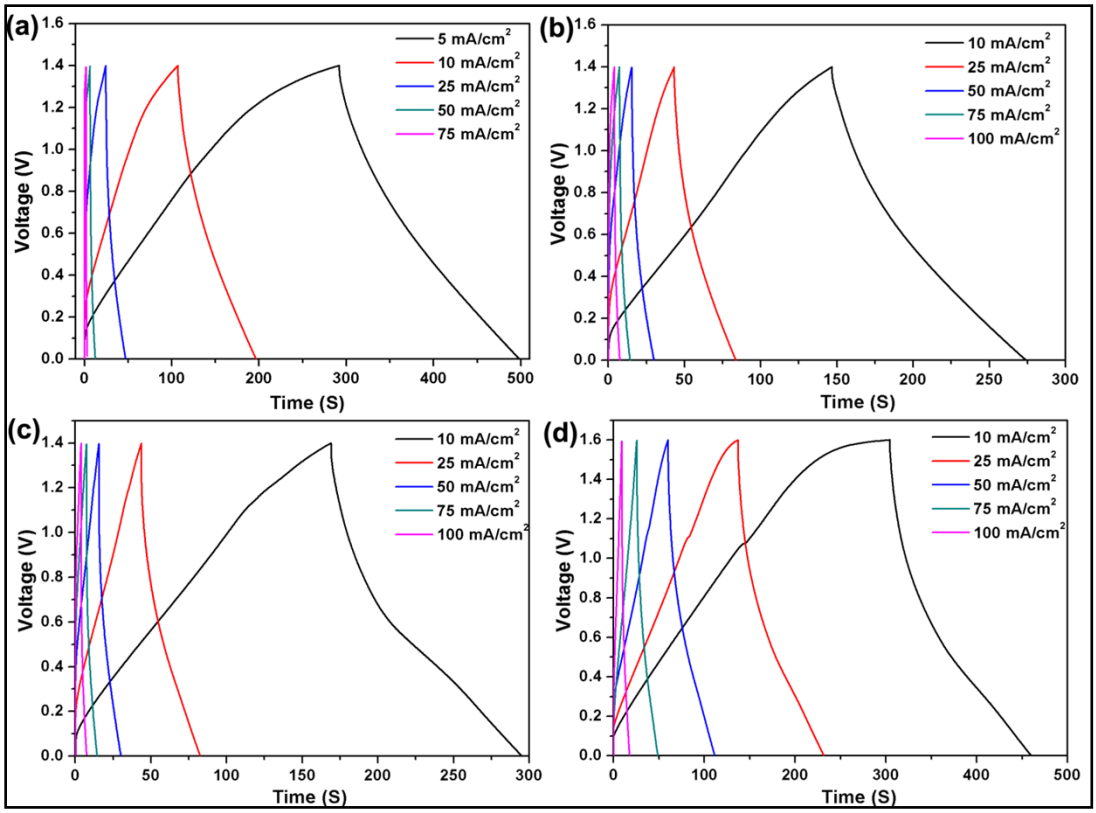

Figure S2 (a) Charging/discharging curves of sheet-like CoO/ACT//ACT/graphene asymmetric supercapacitor with PVA/KOH polymer gel electrolyte at different current densities; (b) Charging/discharging curves of petal-like CoO/ACT//ACT/graphene asymmetric supercapacitor with PVA/KOH polymer gel electrolyte at different current densities; (c) Charging/discharging curves of urchin-like CoO/ACT//ACT/graphene asymmetric supercapacitor with PVA/KOH polymer gel electrolyte at different current densities; (d) Charging/discharging curves of core/shell CoO@NiO/ACT//ACT/graphene asymmetric supercapacitor with PVA/KOH polymer gel electrolyte at different current densities.

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