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Formation of Bimetallic Metal-Organic Frameworks Nanosheets and Their Derived Porous Nickel-Cobalt Sulfides for Supercapacitors

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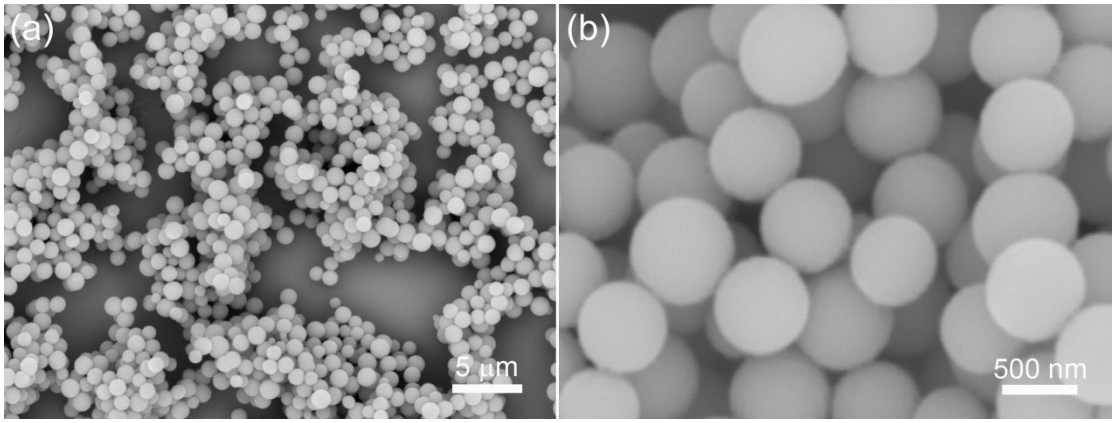

Figure S1. SEM image of Ni-MOF nanospheres.

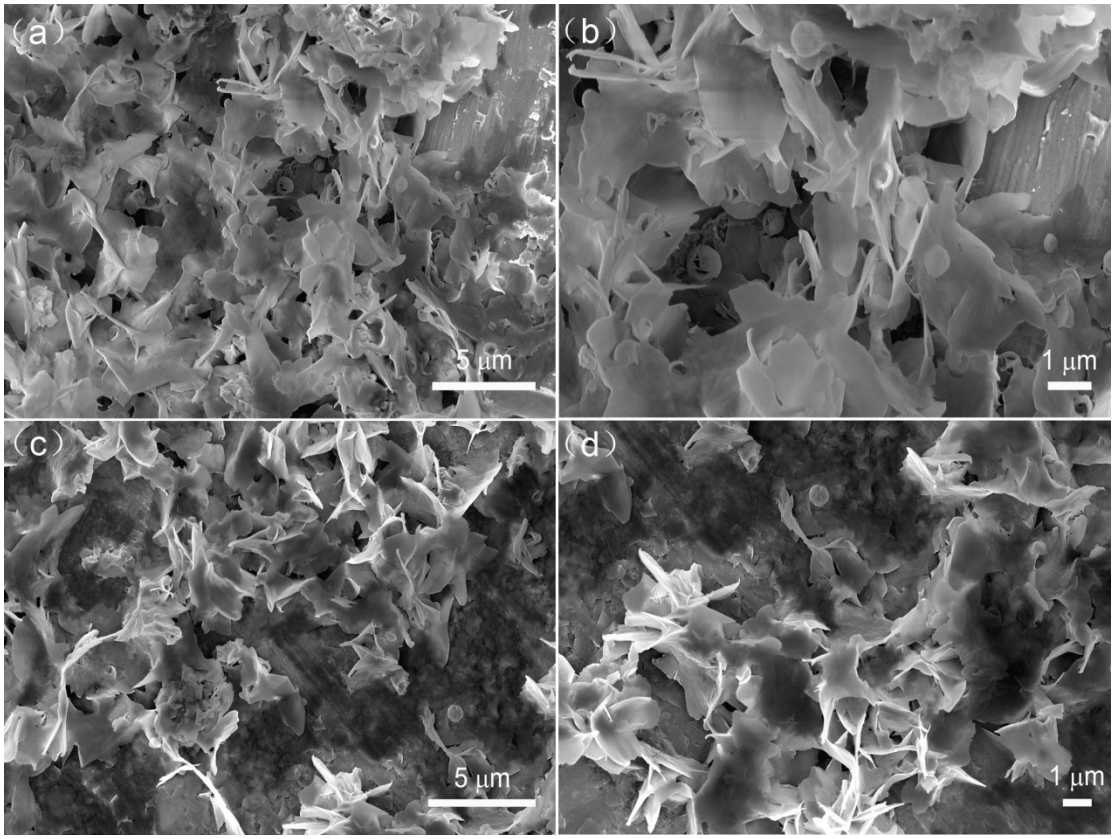

Figure S2. SEM images of (a, b) Ni/Co-MOF-5 for 2h, and (c, d) Ni/Co-MOF-5 for 4h.

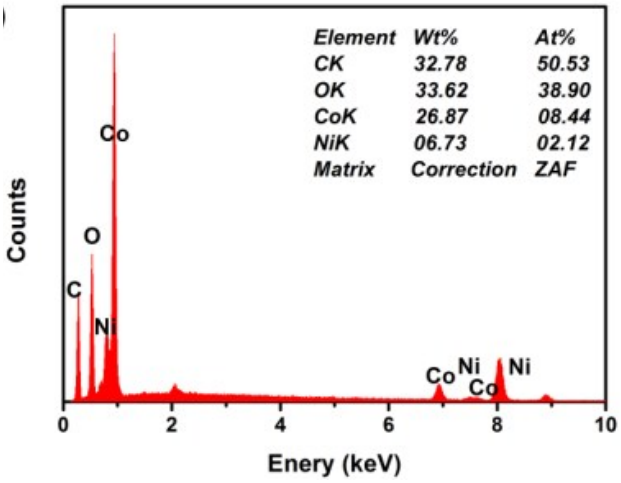

Figure S3. EDS spectrum of the Ni/Co-MOF-5.

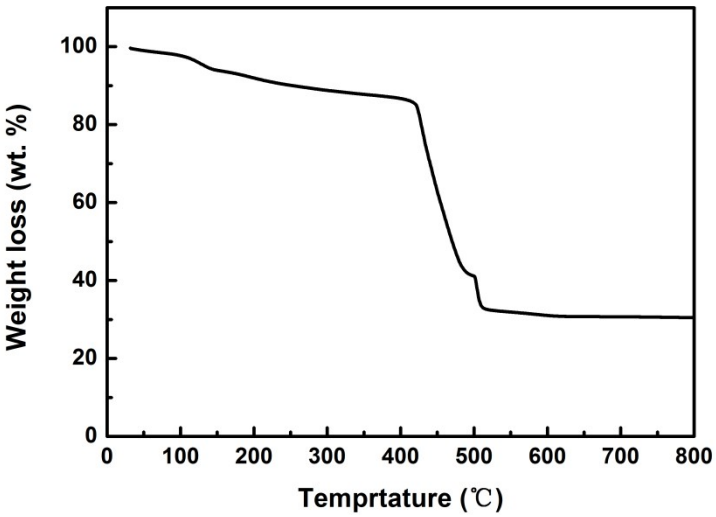

Figure S4. TG-DSC curves of Ni/Co-MOF-5.

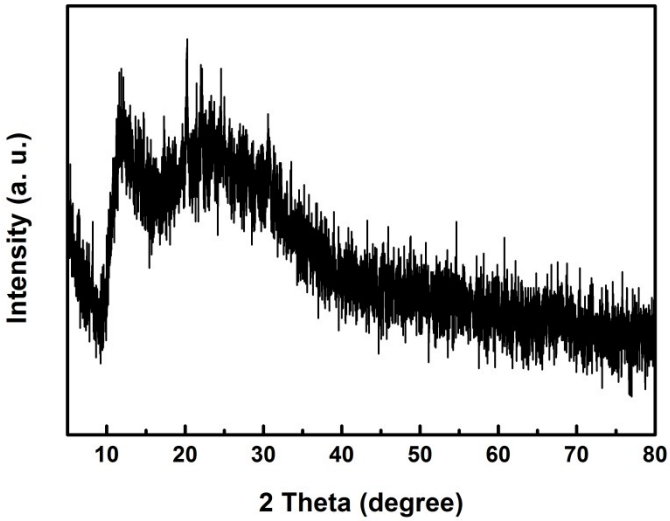

Figure S5. XRD pattern of Ni-Co-S.

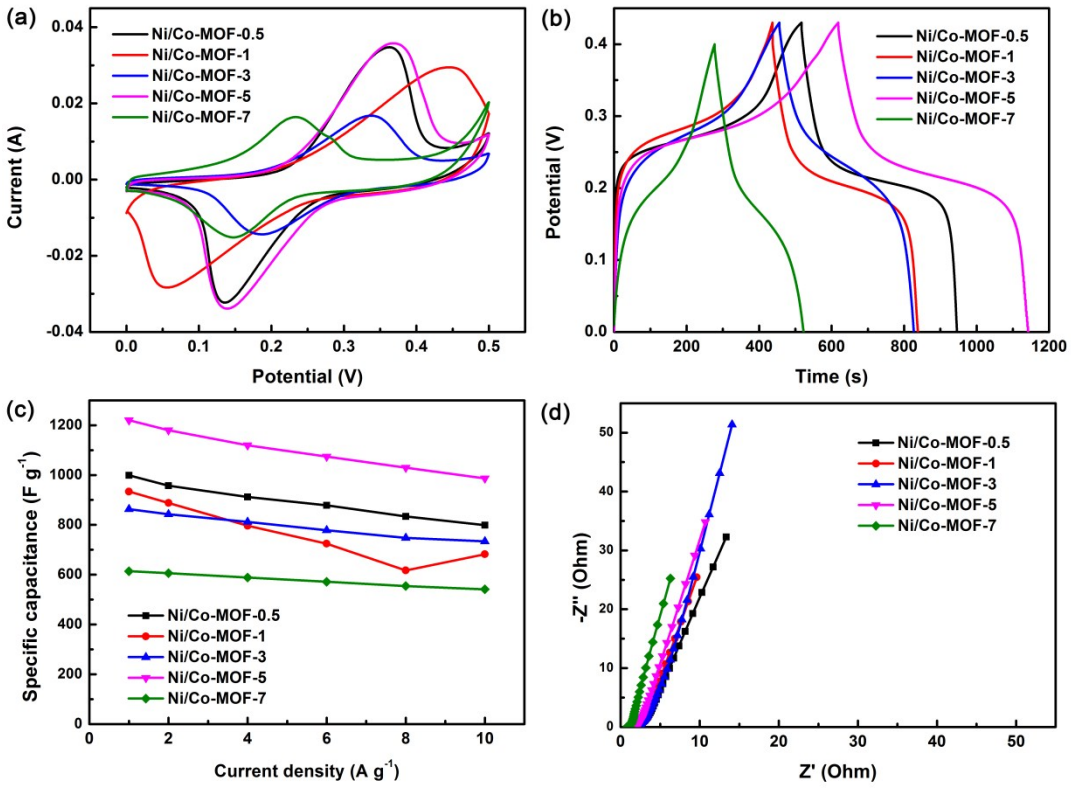

Figure S6. Electrochemical performances of Ni/Co-MOF-x as electrodes for supercapacitors: (a) CV curves at 5 mV s^{-1}; (b) GCD curves at 1 A g^{-1}; (c) Specific capacitance of Ni/Co-MOF-x electrode at different current densities; (d) Nyquist plots of Ni/Co-MOF-x.

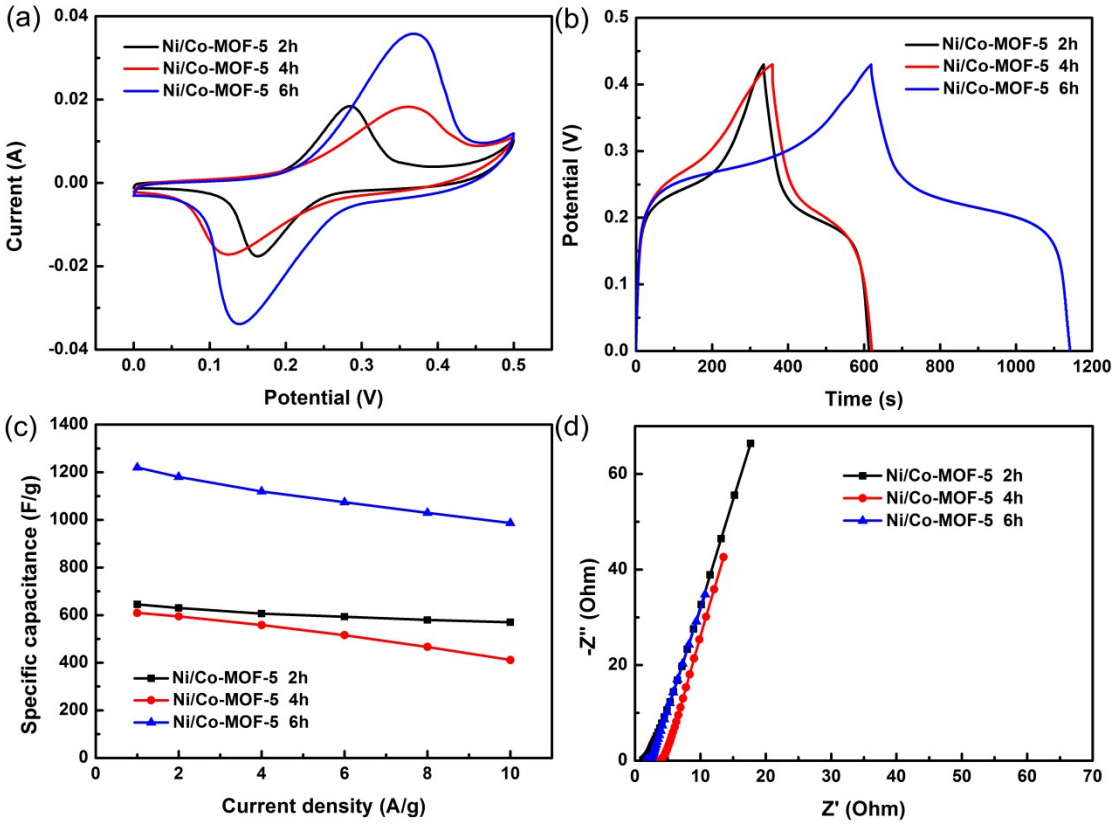

Figure S7. Electrochemical performances of Ni/Co-MOF-5 at different reaction time as electrodes for supercapacitors: (a) CV curves at 5 mV s^{-1}; (b) GCD curves at 1 A g^{-1}; (c) Specific capacitance at different current densities; (d) Nyquist plots of Ni/Co-MOF-5.

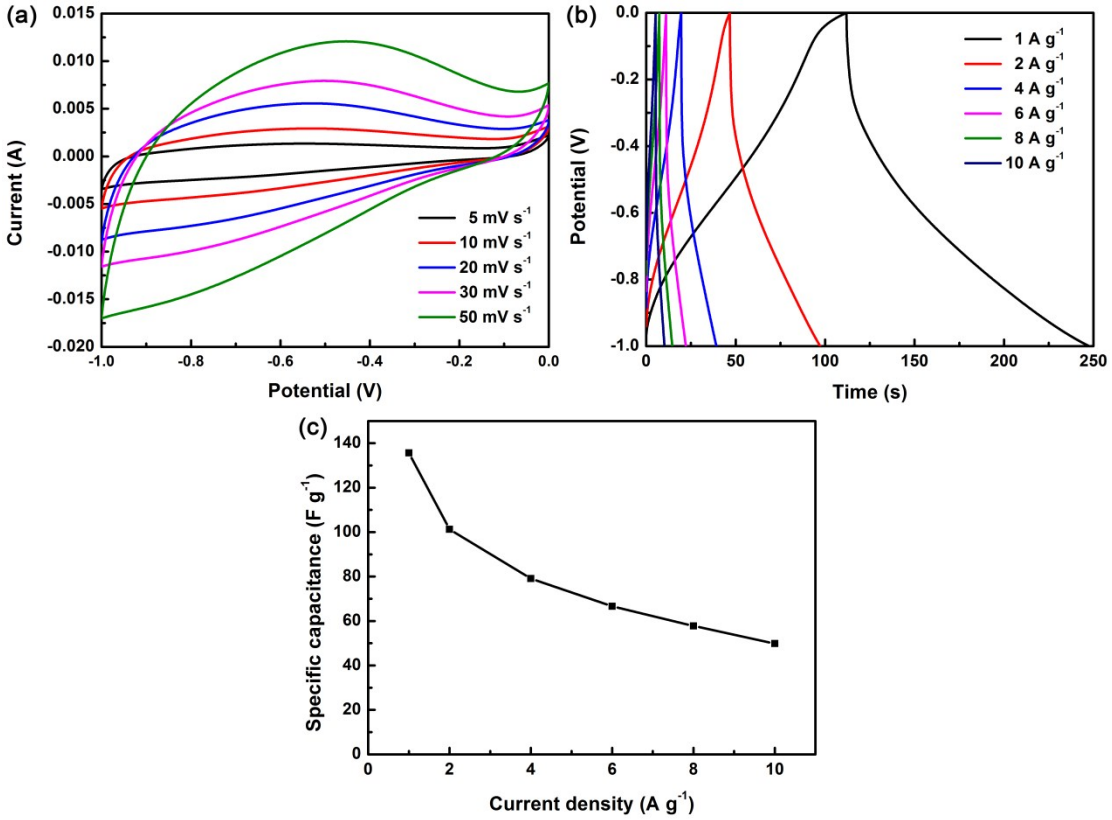

Figure S8. (a) CV curves of AC electrode at different scan rates; (b) GCD curves of AC electrode at various current densities; (c) The corresponding specific capacitance of AC electrode calculated by the GCD curves.

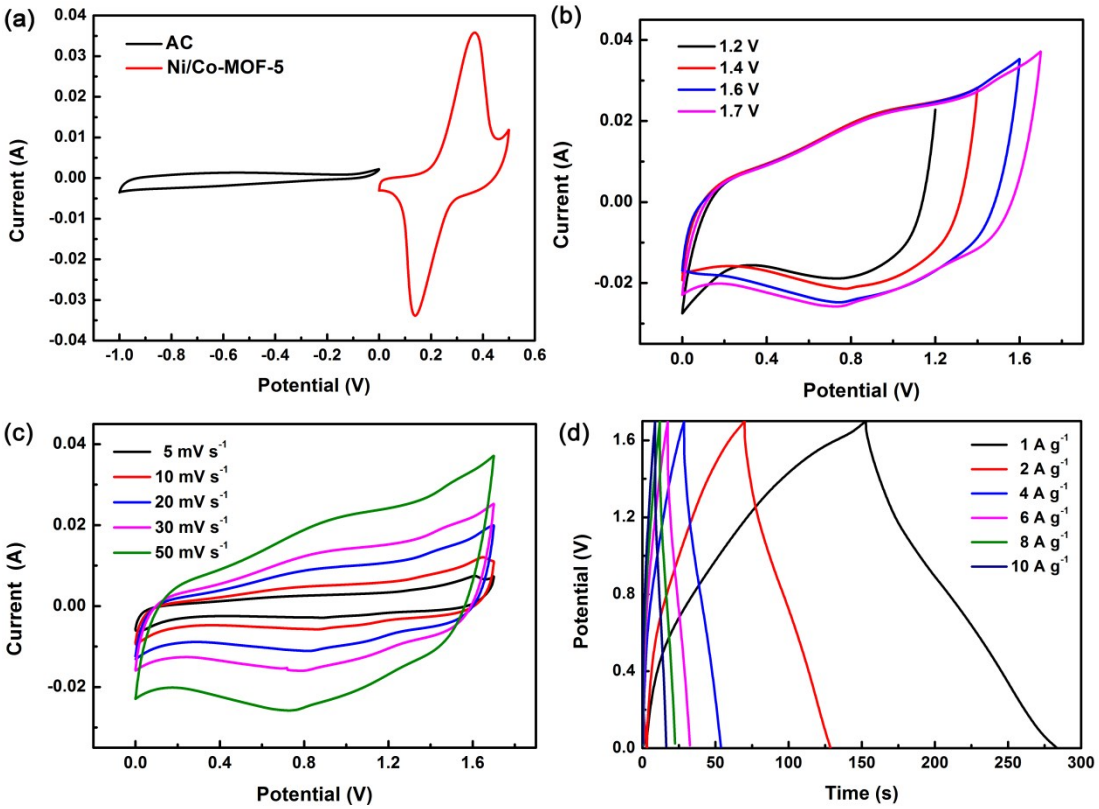

Figure S9. (a) CV curves of Ni/Co-MOF-5 and AC electrodes performed in a three-electrode cell in 3 M KOH electrolyte at a scan rate of 5 mV s^{-1}; (b) CV curves of Ni/Co-MOF-5 electrode at different potentials (50 mV s^{-1}); (c) CV curves of Ni/Co-MOF-5 electrode at various scan rates; (d) GCD curves at different current density of asymmetric supercapacitor devices.

Table S1. Comparison of the capacities of Ni/Co-MOF-5 with the other recently reported MOFs.

Electrode materials	Specific capacitance ($F\ g^{-1}$)	Test condition	Electrolyte solution	Refs
2D Ni/Co-MOF	530.4 $F\ g^{-1}$	0.5 $A\ g^{-1}$	1 M LiOH	S1
Ni-MOF	1021 $F\ g^{-1}$	0.7 $A\ g^{-1}$	3 M KOH	S2
Ni/Co-MOF	1049 $F\ g^{-1}$	1 $A\ g^{-1}$	3 M KOH	S3
N doped Zn-MOF	285.8 $F\ g^{-1}$	0.1 $A\ g^{-1}$	6 M KOH	S4
Ni/Co-MOF	1220.2 $F\ g^{-1}$	1 $A\ g^{-1}$	3 M KOH	This work

References

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