Electronic Supplementary Information (ESI)

Achieving highly practical capacitance of MnO_2 by using chain-like CoB alloy as support

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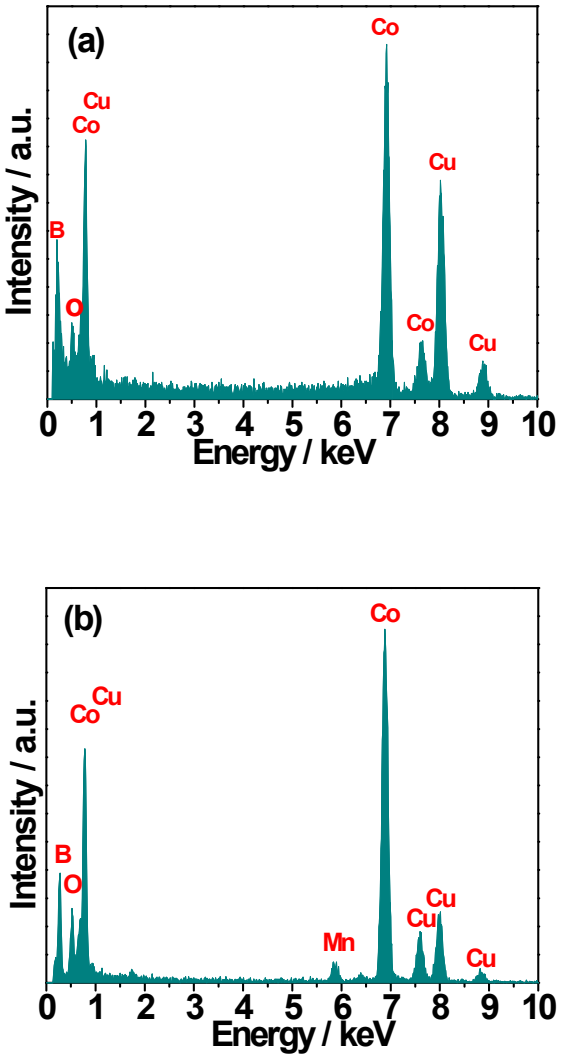

Figure S1. EDS patterns of (a)CoB and (b)CoB@MnO_2

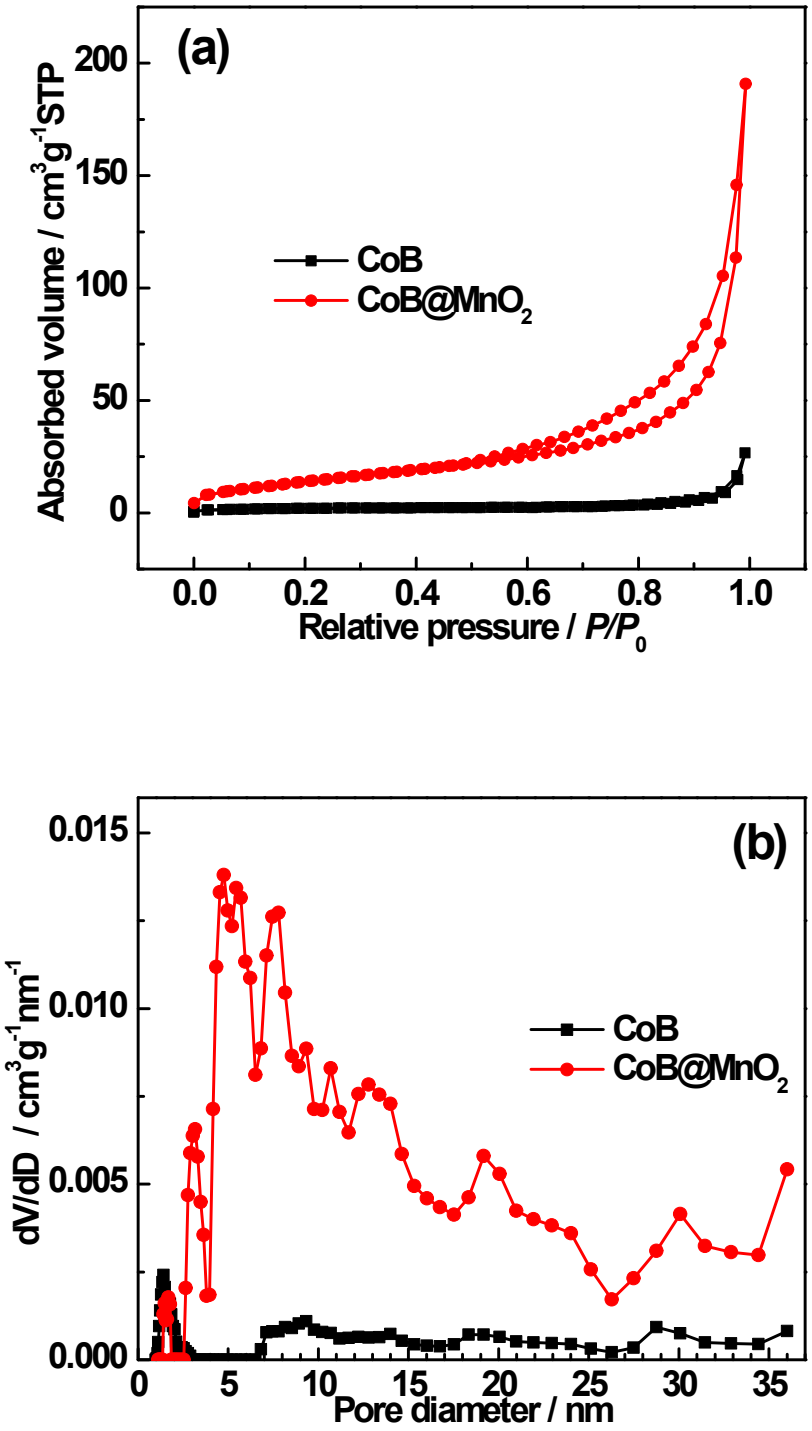

Figure S2. (a) N_2 isotherms and (b) pore size distribution of CoB and CoB@MnO_2.

Table S1. A summary of our CoB-core@MnO_2-shell with the value obtained from some other conductive core@MnO_2-shell independent literaures.

Sample core-shell	The literature	The optential window	The specific capacitance (F g^{-1})	[a]Current density	[b]Retention(%)/cycling number/[c]current density	Electrolyte
CoB@MnO_2	Our work	0.8 V	612.0	0.5 A g^{-1}	97.7%/6000/2 A g^{-1}	3 M LiOH
Au@MnO_2	[18]	0.8 V	601	0.5 A g^{-1}	85%/1000/1 A g^{-1}	2 M Li_2SO_4
Ni@MnO_2	[45]	0.85 V	502	5 mV s^{-1}	93%/500/5 mV s^{-1}	0.1 M Na_2SO_4
CNT@MnO_2	[46]	1.0 V	110	5.3 A g^{-1}	88%/2500/50 A g^{-1}	1 M Na_2SO_4
Petal-like C@MnO_2	[8]	1.0 V	163	2 mV s^{-1}	97.8%/5000/100 mV s^{-1}	1 M Na_2SO_4
C@MnO_2	[11]	0.8 V	252	0.5 A g^{-1}	74%/2000/5 A g^{-1}	1 M Na_2SO_4
CNF@MnO_2	[47]	0.8 V	321	0.5 A g^{-1}	100%/1000/5 A g^{-1}	0.1 M Na_2SO_4
PANI@MnO_2	[17]	0.9 V	262	0.5 A g^{-1}	93%/800/3A g^{-1}	0.5 M Na_2SO_4
PANI@MnO_2	[48]	0.9 V	290	0.2 A g^{-1}	96%/3000/2 A g^{-1}	1 M KCl
PANI@MnO_2	[49]	0.85 V	330	0.5 A g^{-1}	94%/1000/1 A g^{-1}	0.1 M Na_2SO_4
PANI@MnO_2	[50]	0.7 V	627	2 A g^{-1}	55%/1000/10 A g^{-1}	1 M H_2SO_4

a: the specific capacitance and areal capacitance was obtained at the current density.
b: after cycling test, the retention of the specific capacitance.

c: the cycling test was carried out with the current density.
d: the value was calculated based on the data in the literature.
CNF: Carbon nanofiber, CNT: Carbon nanotube, PANI: Ployaniline

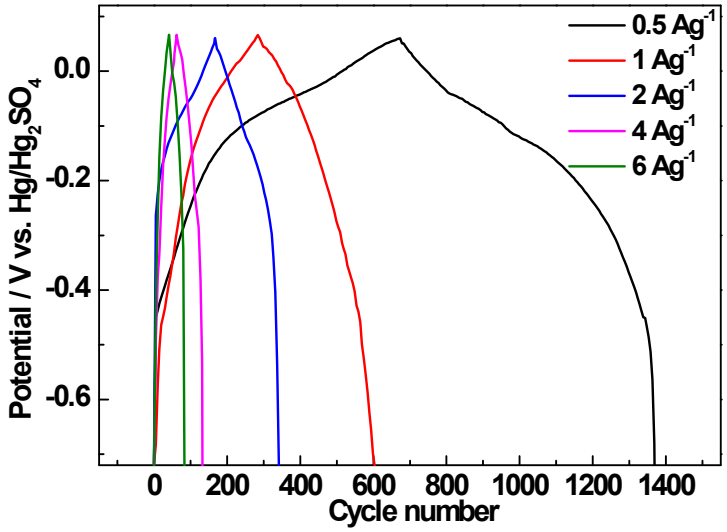

Figure S3. Galvanostatic charge-discharge curves of the CoB electrode at different current densities of 0.5, 1, 2, 4, and 6 A g^{-1} respectively.

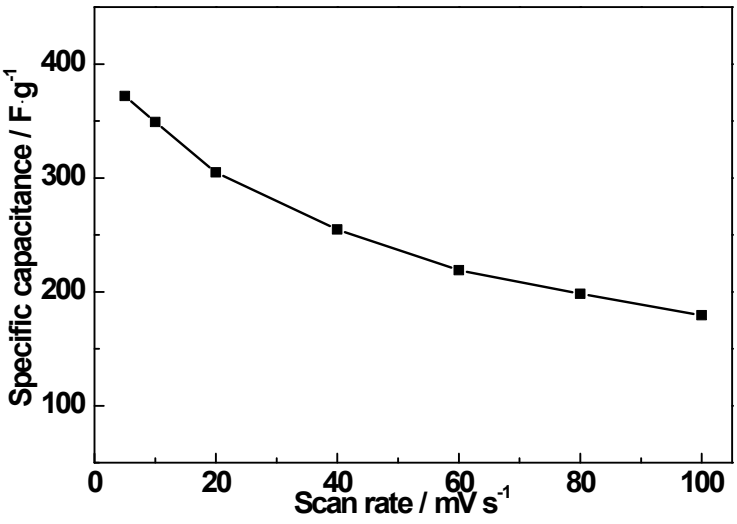

Figure S4. Specific capacitance of CoB@MnO_2 vs. scan rate.