Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Electronic Supplementary Information

Rechargeable Mg-Na and Mg-K hybrid batteries based on low-defect $Co_3[Co(CN)_6]_2$ nanocube cathode

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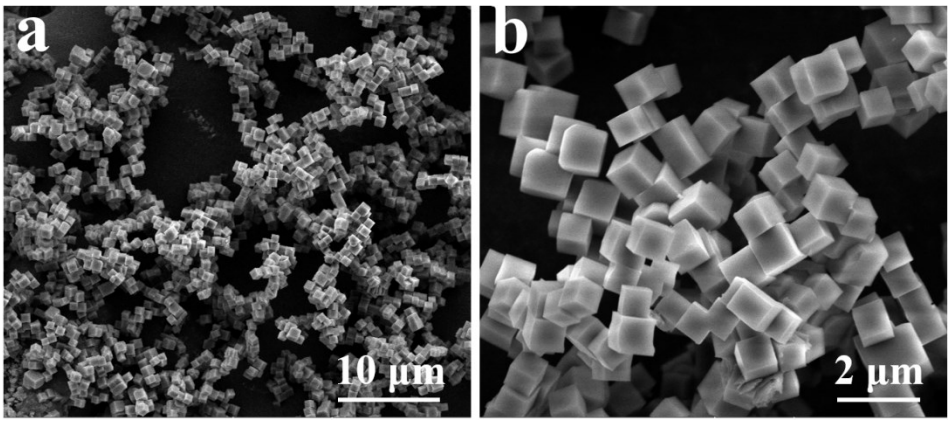

Fig. S1 SEM images of L-CoCoCN.

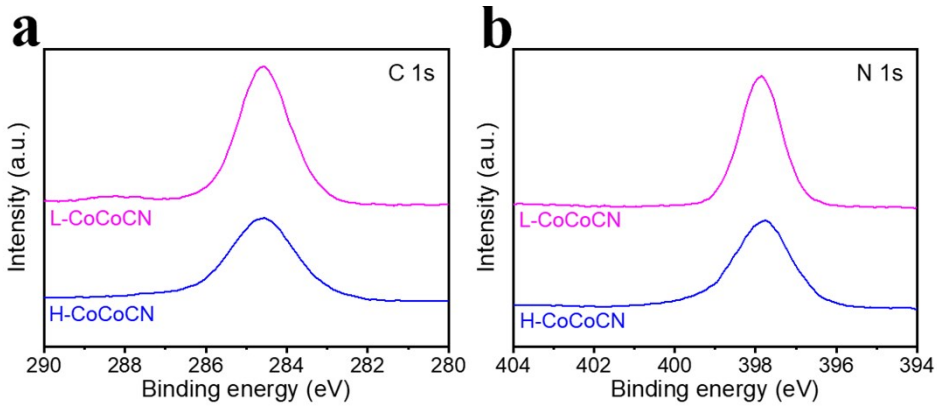

Fig. S2 High-resolution XPS spectra of (a) C 1s and (b) N 1s for L-CoCoCN and H-CoCoCN.

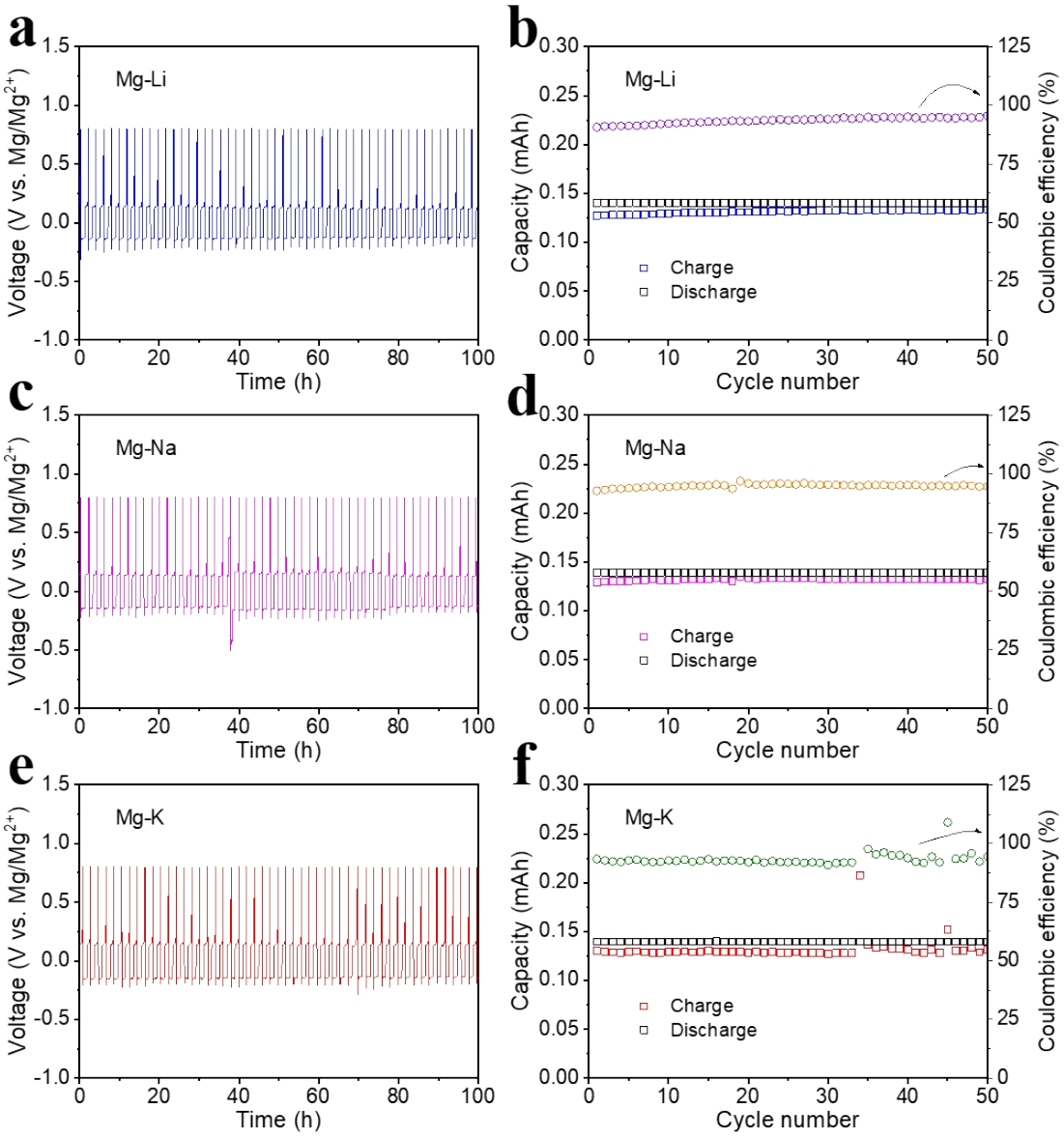

Fig. S3 Galvanostatic chronopotentiograms of Mg deposition/dissolution in (a,b) Mg^{2+}/Li^{+}, (c,d) Mg^{2+}/Na^{+} and (e,f) Mg^{2+}/K^{+} dual-ion electrolytes.

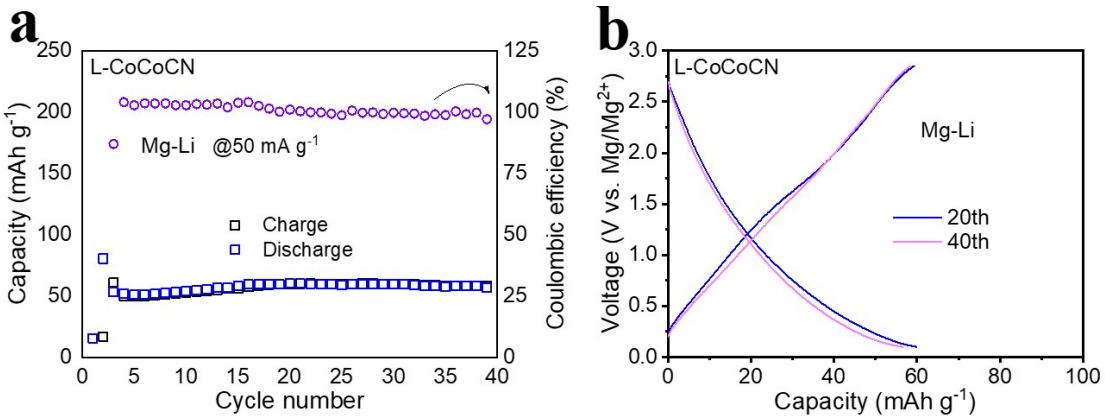

Fig. S4 (a) Discharge/charge profiles and (b) Cycling performance of L-CoCoCN Mg-Li cell at 50 mA g^{-1}.

Table S1. Elements mass percentage of L-CoCoCN and H-CoCoCN determined by EA measurements and calculation.

Sample	EA			Calculation	
	H	C	N	O	Co
L-CoCoCN	2.5 wt%	18.3 wt%	20.9 wt%	20.0 wt%	38.3 wt%
H-CoCoCN	3.2 wt%	17.2 wt%	18.2 wt%	25.6 wt%	35.8 wt%