Supporting Information

The effect of lithium content on the discharge and electrochemical performance of Mg-Li-Zn-Y alloy for primary Mg-air batteries

Xu Cheng[1], Beibei Sun[1, 2], Tingting Wei[1], Jiemin Dong[1], Xin Cao[1], Jiaxin Zhang[1], Yanhua Zhang[1], Tao Wang[1], Yanhui Liu[1], Feng Zhong[1]*, Ming Liang[1]*, Jianfeng Li[1]

[1]Institute of Magnesium and Lithium Materials, Northwest Institute for Nonferrous Metal Research, Xi'an, Shannxi 710016, China

[2]School of Materials Science and Engineering, Xi'an University of Technology, Xi'an, Shannxi 710043, China

* Corresponding author:

Ming Liang

Email: mliang@c-nin.com

Feng Zhong

Email: mlszf06@163.com

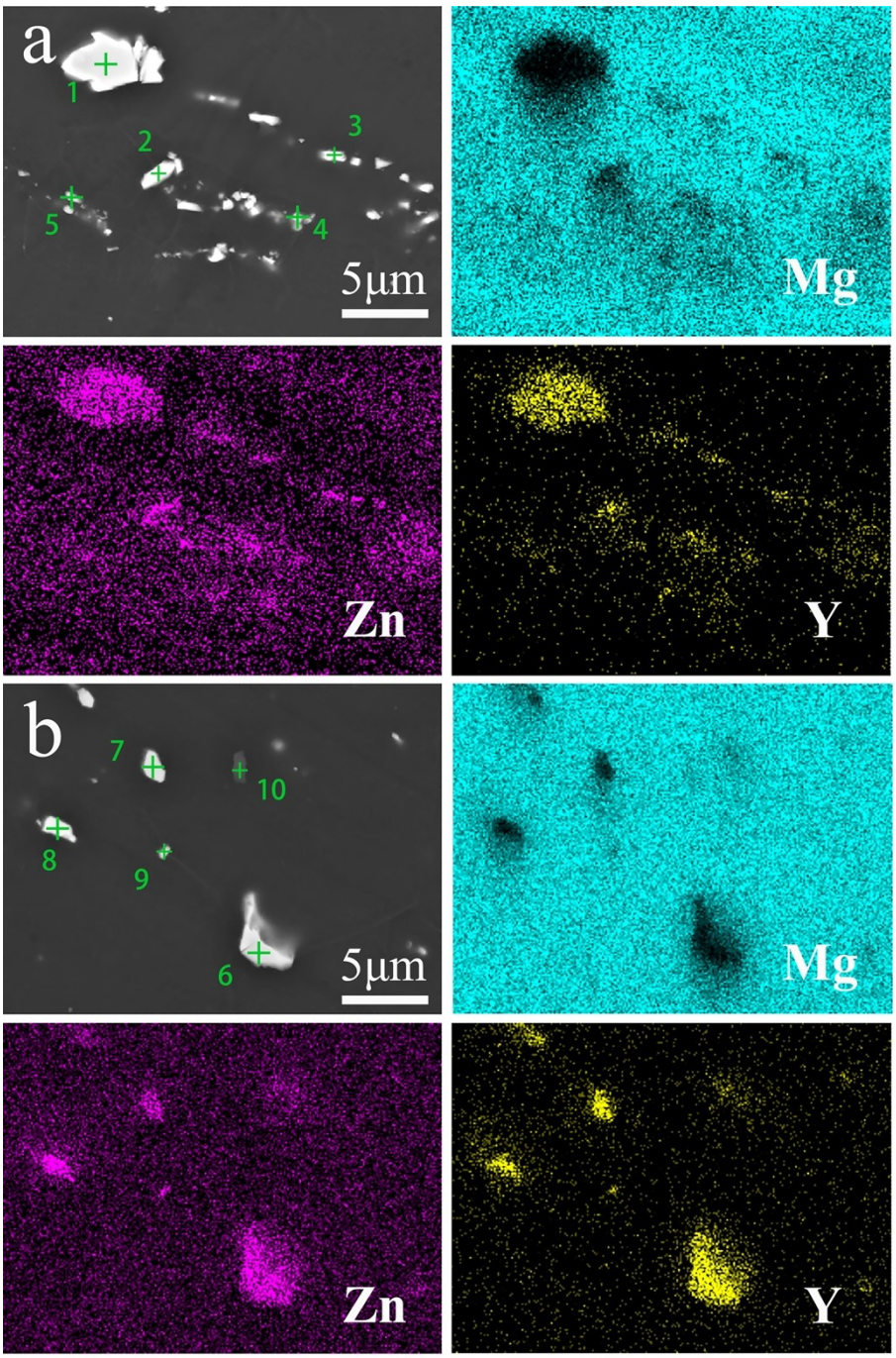

Fig. S1. EDS elements mapping of (a) ML8 and (b) ML11.

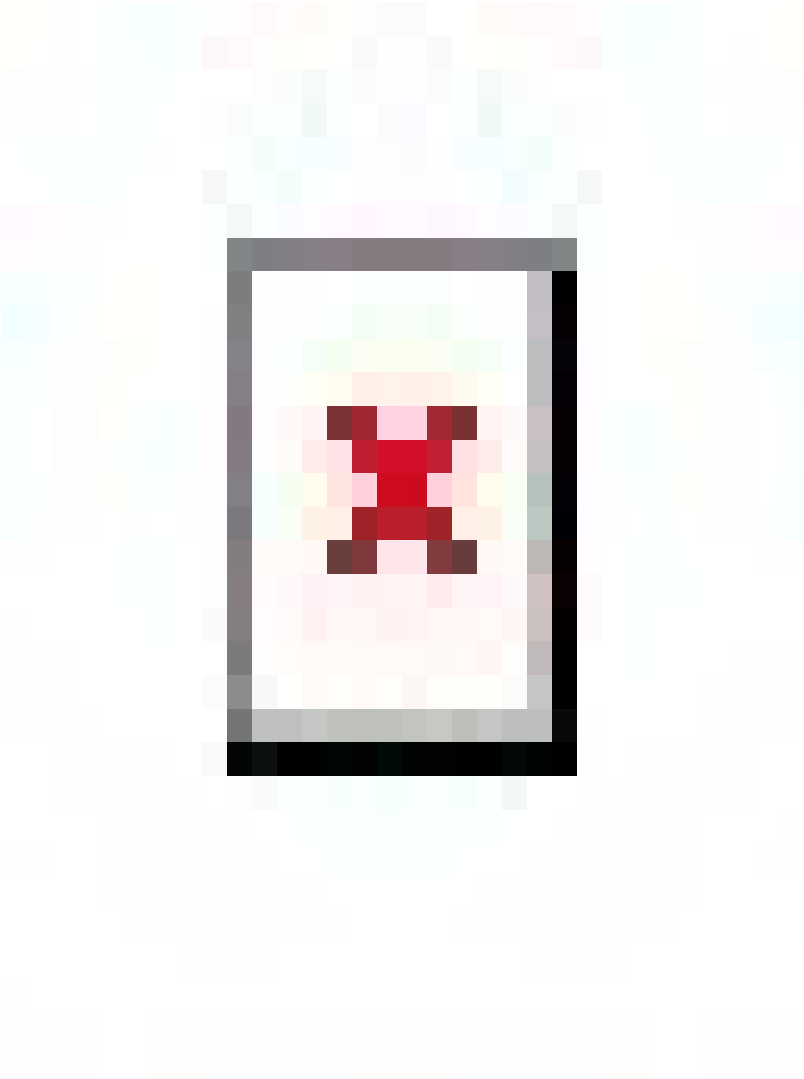

Fig. S2. TEM analysis of ML8 alloy: (a) TEM images and SAED pattern of the corresponding region, (b) HRTEM images.

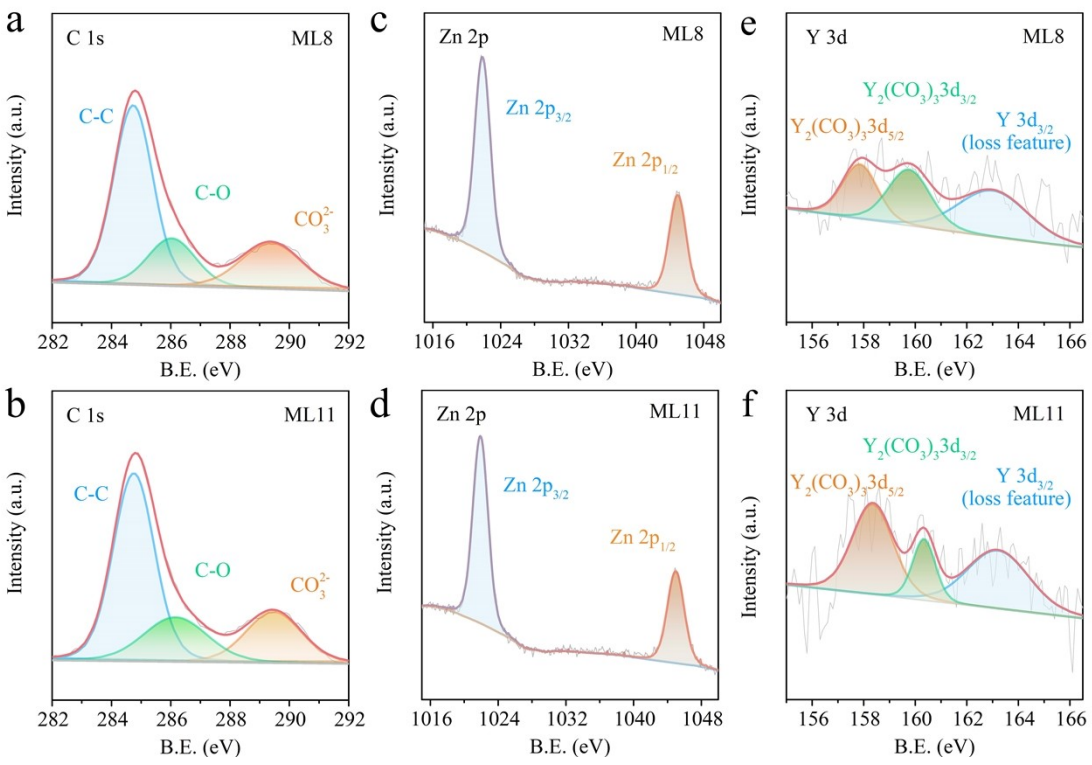

Fig. S3. XPS results of ML8 and ML11, (a-b) survey scanning spectrum, (c-d) Zn 2p spectra, and (e-f) Y 3d spectra.

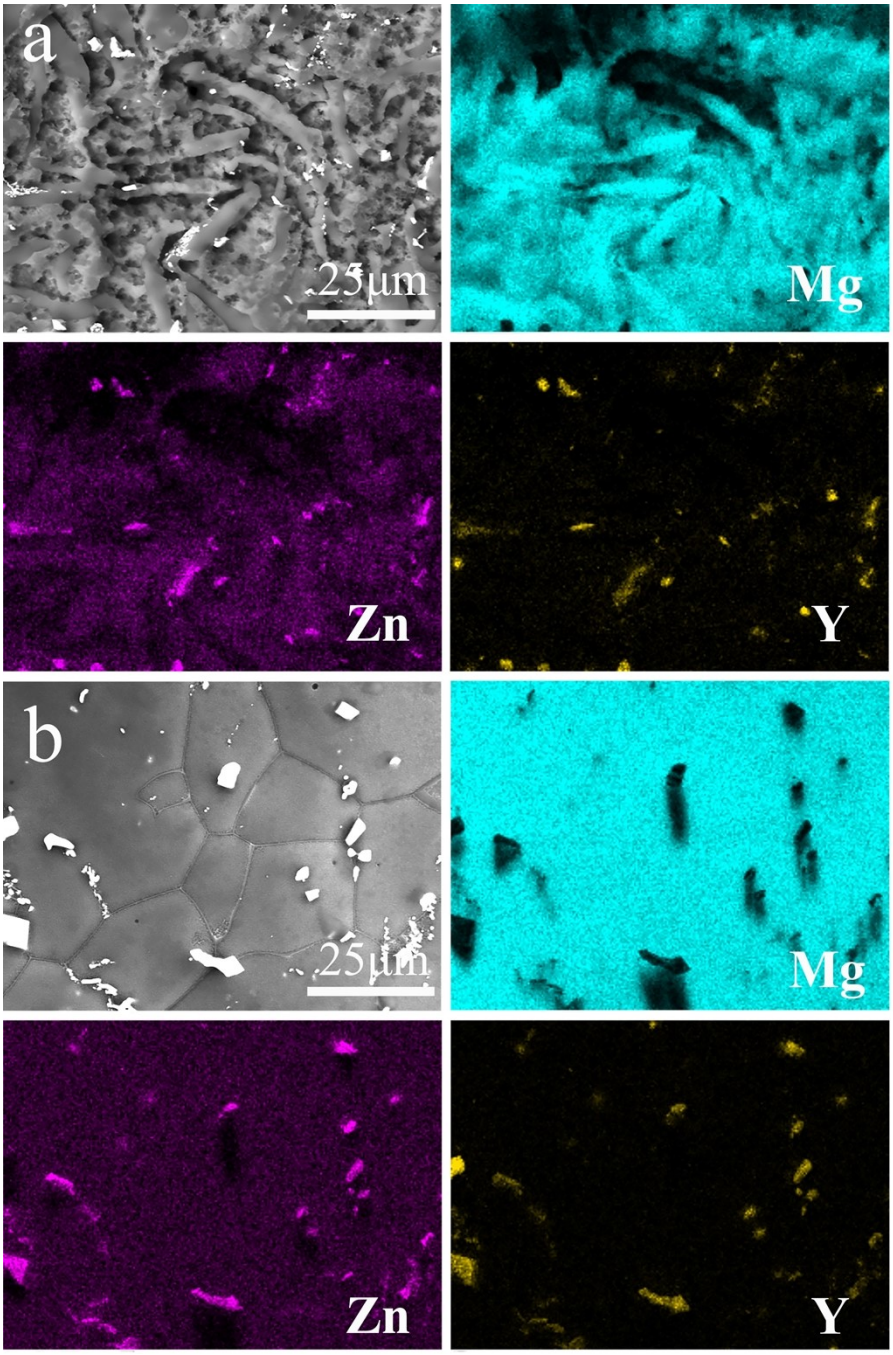

Fig. S4. EDS elements mapping of (a) ML8 and (b) ML11 after removal of discharge products.

Table S1. Proportion of elements at different positions and the ratio of Zn and Y (at.%).

Position	Mg/%	Zn/%	Y/%	Zn/Y
1	15.61	44.64	39.75	1.12
2	63.77	23.67	12.56	1.88
3	78.77	13.56	7.67	1.77
4	84.00	10.52	5.48	1.92
5	86.22	9.02	4.75	1.90
6	39.39	34.66	25.95	1.34
7	52.73	24.24	23.03	1.05
8	43.54	35.99	20.47	1.76
9	83.75	10.48	5.77	1.82
10	97.19	2.64	0.17	15.53