

## Supporting Information

### **Innovative Electrochemical Strategy to Recovery of Cathode and Efficient Lithium Leaching from Spent Lithium-Ion Batteries**

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## Tables

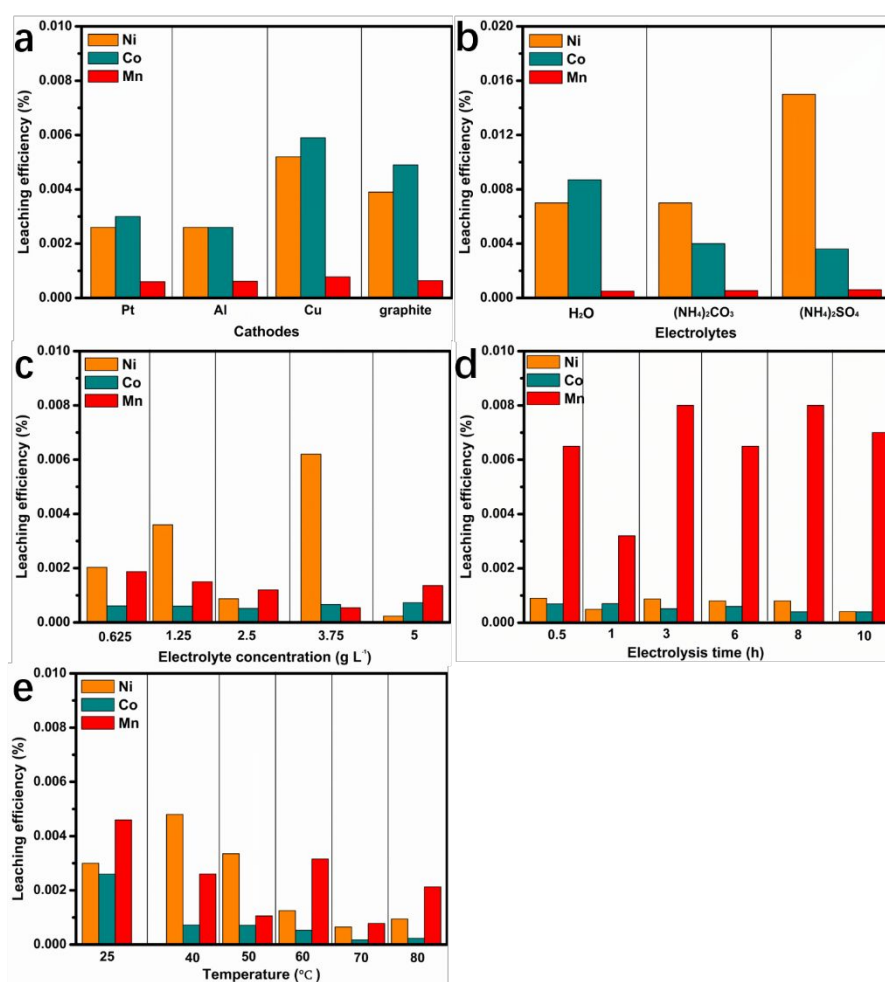
**Tab. S1** The leaching efficiency of metal using different cathodes in  $(\text{NH}_4)_2\text{SO}_4$  electrolyte.

Cathodes	Leaching efficiency (%)					Time (min)
	Li	Al	Ni	Co	Mn	
Pt	98.13	2.51	0.0026	0.0030	0.00060	4-5
Al	91.82	11.09	0.0026	0.0026	0.00061	18-20
Cu	91.92	4.49	0.0052	0.0059	0.00078	18-20
Graphite	85.86	5.01	0.0039	0.0049	0.00064	28-30

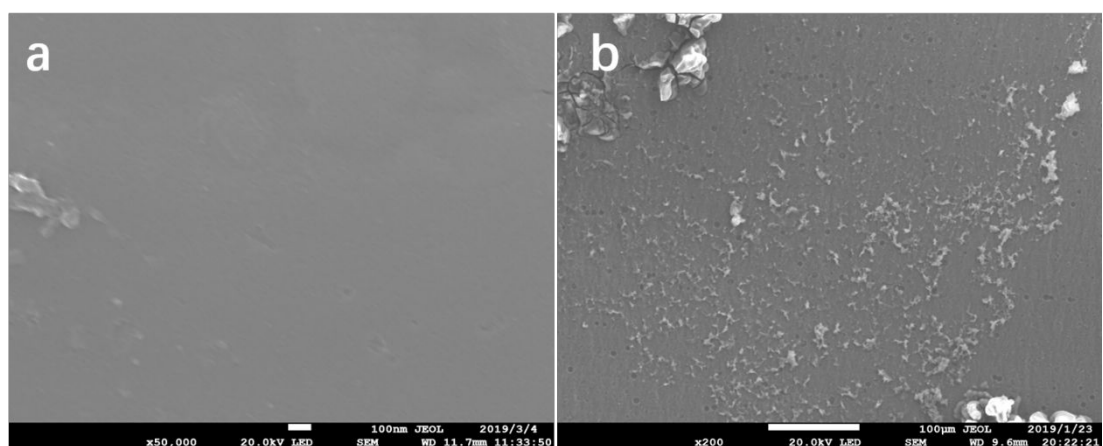
**Tab. S2** The recovery rate of metal elements with the optimized condition

Elements	Li	Al	Ni	Co	Mn
Recovery rate (%)	98.28	97.48	99.56	99.24	98.75

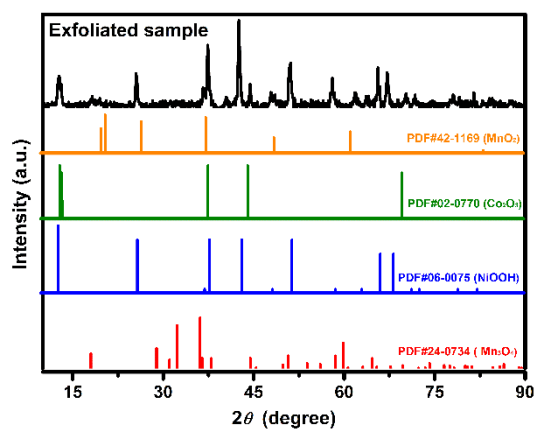
## Figures



**Fig. S1** The leaching efficiency of Ni, Co and Mn elements in different conditions by electrolysis process.



**Fig. S2** The surface appearance of the Al foils before (a) and after (b) electrolysis in  $(\text{NH}_4)_2\text{SO}_4$  solution.



**Fig. S3** XRD patterns of the exfoliated cathode residue after electrolysis