

**Removal of organics by pyrolysis for enhancing liberation and flotation behavior
of electrode materials derived from spent lithium-ion batteries**

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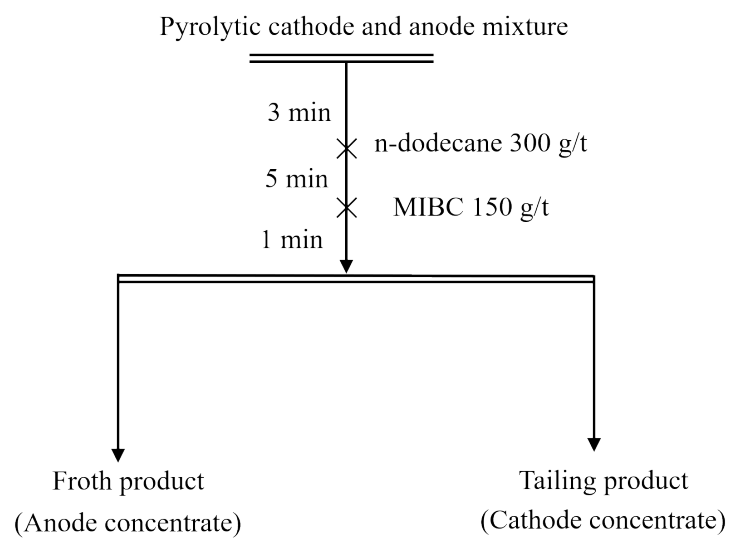


Figure S1 Flotation flowchart of electrode materials

Table S1 Main pyrolysis products of electrode materials at temperature of 120 °C




Number	Pyrolysis products	Structural formula	Source
1	Dimethyl Carbonate		Electrolyte
2	Ethylene Carbonate		Electrolyte
3	Propylene Carbonate		Electrolyte

Table S2 Main pyrolysis products of electrode materials at temperature of 250 °C






Number	Pyrolysis products	Structural formula	Source
1	Dimethyl peroxide		Electrolyte
2	Dimethyl Carbonate		Electrolyte
3	Ethylene Carbonate		Electrolyte
4	Propylene Carbonate		Electrolyte
5	Methylacetic		Electrolyte

Table S3 Main pyrolysis products of cathode material at temperature of 500 °C








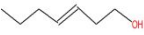


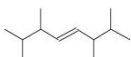
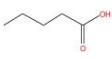
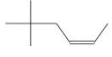
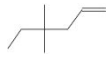

Number	Pyrolysis products	Structural formula	Source
1	Vinylidene fluoride		Organic binder
2	1,3,5-trifluorobenzene		Organic binder
3	1,4-difluorobenzene		Organic binder
4	1,1,1,3,3,3-hexafluoro-Propane		Organic binder
5	Ethylene Carbonate		Electrolyte
6	Propylene Carbonate		Electrolyte
7	1,2,4-trifluorobenzene		Organic binder

Table S4 Main pyrolysis products of anode material at temperature of 450 °C

Number	Pyrolysis products	Structural formula	Source
1	3-heptene-1-alcohol		Organic binder / Electrolyte
2	1,3-butadiene		Organic binder
3	Styrene		Organic binder
4	2,3,6,7-tetramethyl -4-octylene		Organic binder
5	Heptanoic acid		Organic binder / Electrolyte
6	5,5-dimethyl-2-hexene		Organic binder
7	4,4-dimethyl-1-hexene		Organic binder
8	Octanoic acid		Organic binder / Electrolyte