Supplementary Information

Recycling and Reuse of Spinel Electrode from Spent Lithium-ion Batteries

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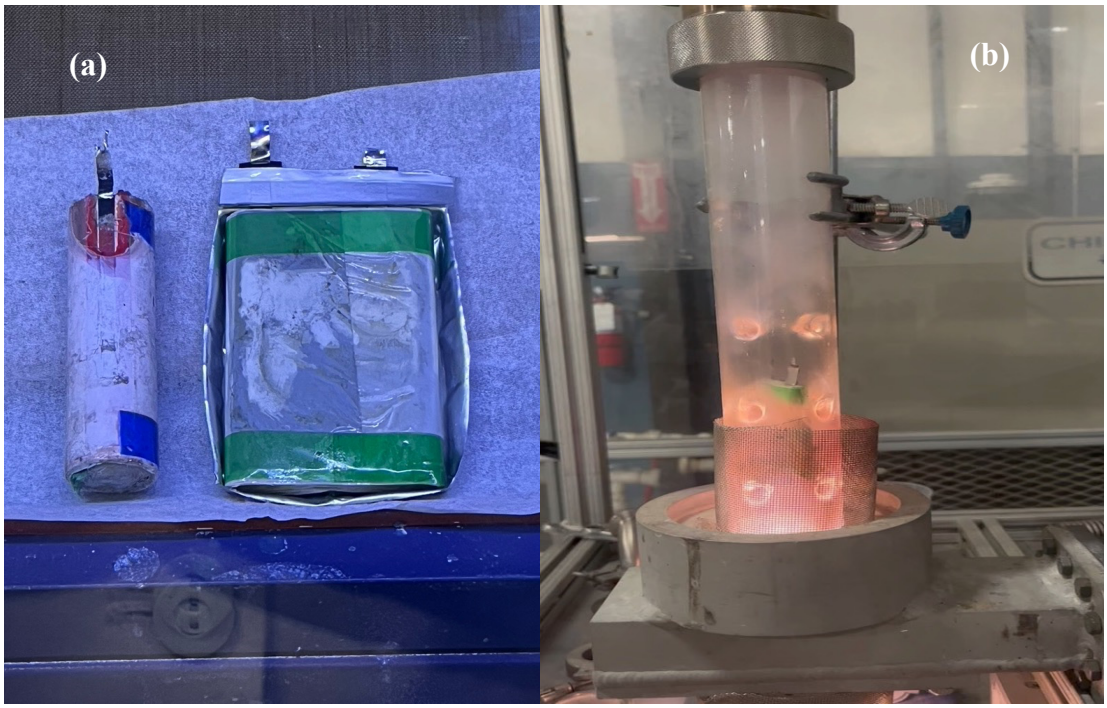


Figure S1 Images of disassemble cell (a) at inert Ar-glove box, and (b) plasma flame exposure of pouch cells

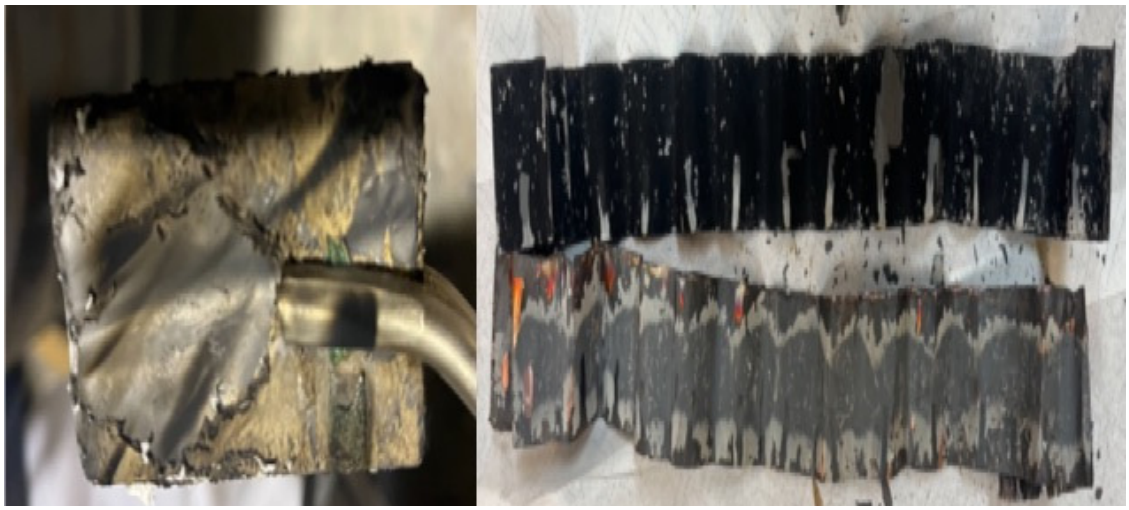


Figure S2 Image after plasma flame exposure of pouch cell, and separated cathode, anode electrode

coated on Al and Cu foils.

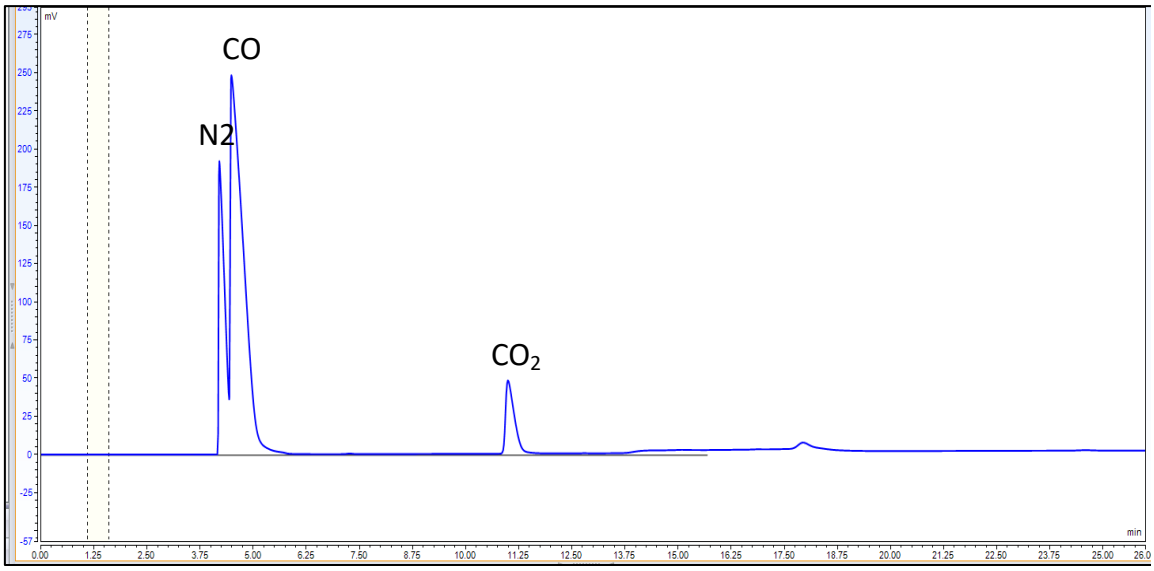


Figure S3 Gas chromatography analysis of plasma exposed Li-ion pouch cell.

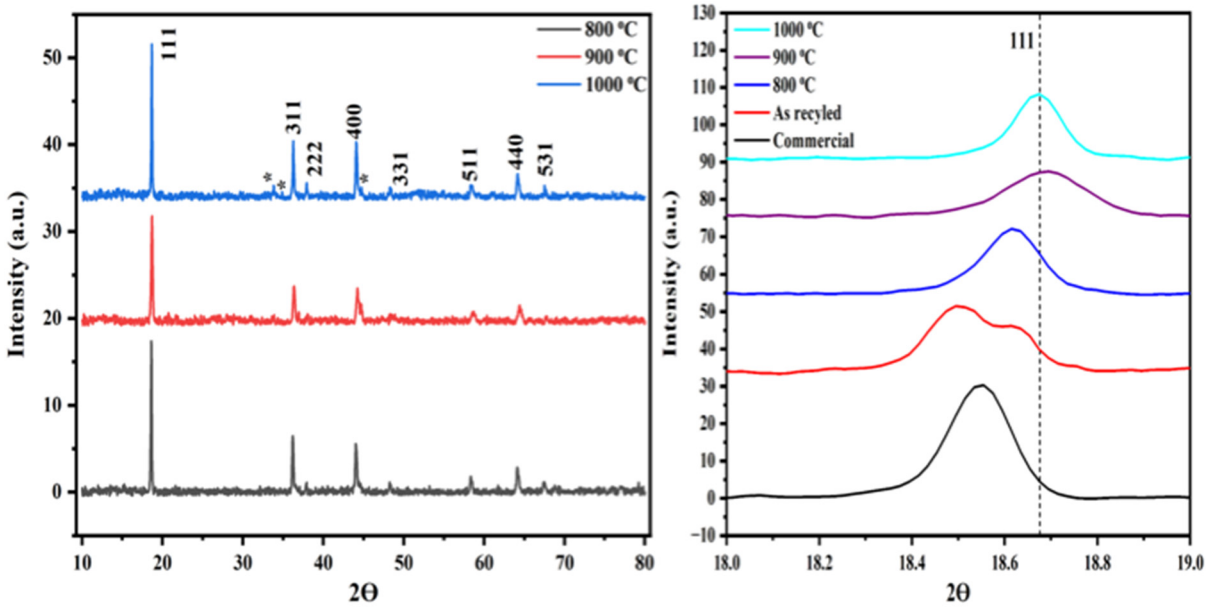


Figure S4. Left: X-ray diffraction patterns of as-recycled $LiMn_2O_4$ heat treated at 800 ºC, 900 ºC and 1000 ºC. Right: The X-ray diffraction of 111 peak for commercial $LiMn_2O_4$, as-recycled $LiMn_2O_4$, and as-recycled $LiMn_2O_4$ heat treated at 800 ºC, 900 ºC and 1000 ºC.

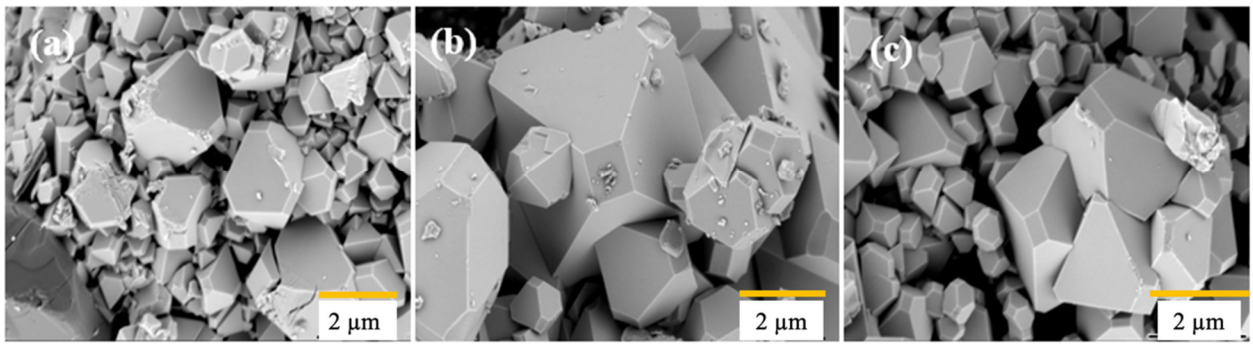


Figure S5. SEM images of as recycle $LiMn_2O_4$ regenerated at (a) 800 ºC , (b) 900 ºC, and (c) 1000 ºC.