

Supporting information

Electrochemical Reduction of a Spinel-type Manganese Oxide Cathode in Aqueous Electrolytes with Ca^{2+} or Zn^{2+}

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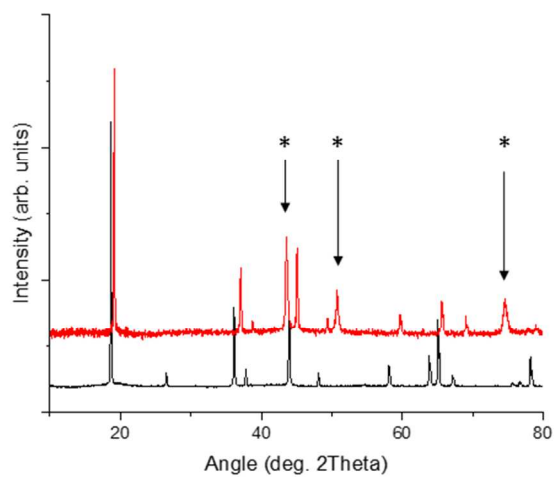


Figure S1. Powder X-ray diffraction (PXRD) of cubic spinel LiMn_2O_4 (black) and Mn_2O_4 (red). Asterisks (*) mark diffraction peaks of stainless steel mesh current collector.

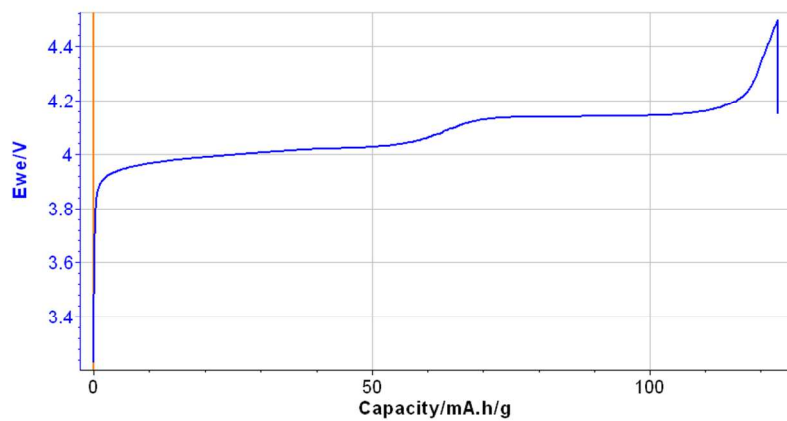


Figure S2. Galvanostatic charging of cubic spinel LiMn_2O_4 to completely remove Li from the structure.

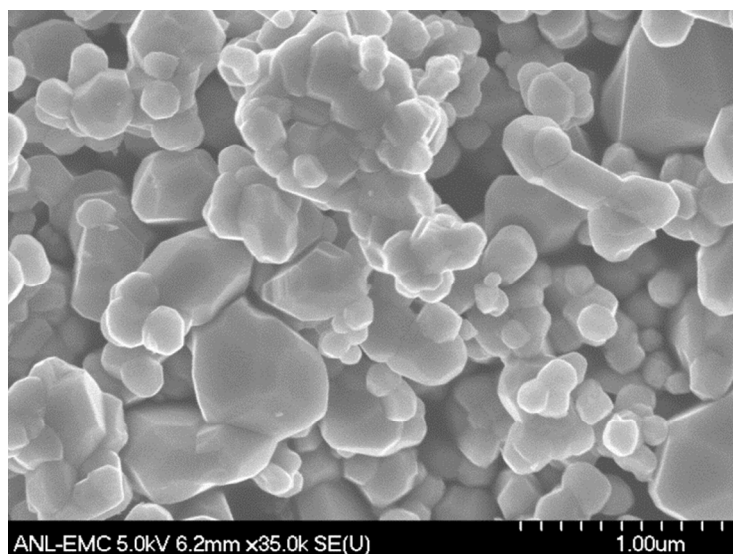
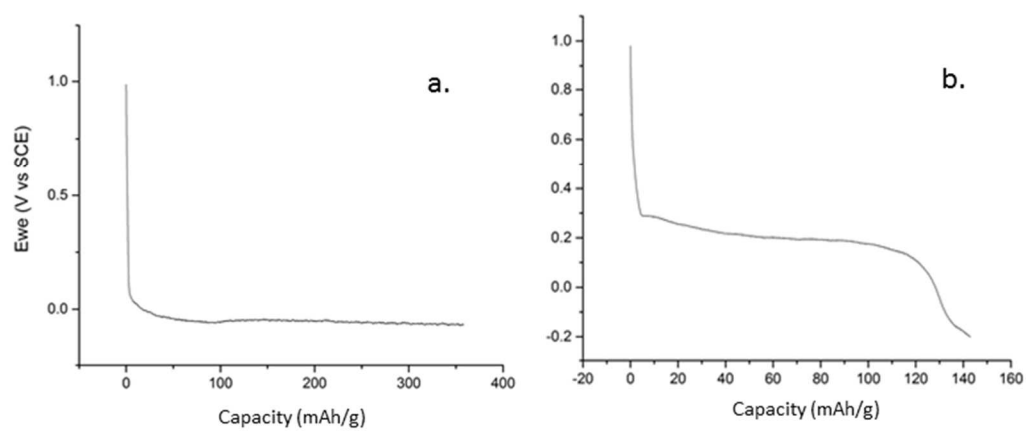


Figure S3. SEM image of parent spinel LiMn_2O_4 purchased from NEI Co.



Figures S4. Voltage profiles for the electrochemical reduction of Mn_2O_4 in slightly acidic Ca (a) or Zn (b) electrolytes.

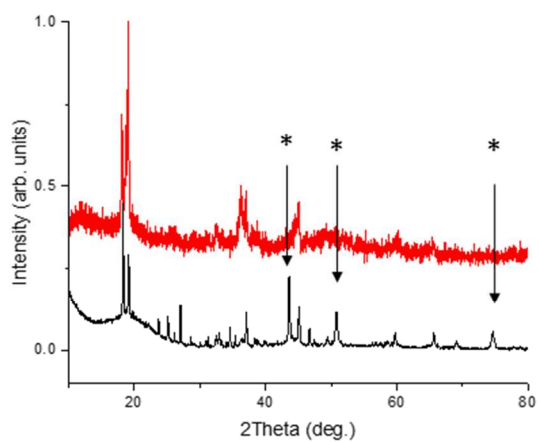


Figure S5. Powder X-ray diffraction of Mn_2O_4 host: pristine (black line) and electrochemically reduced in acidic Ca (red) and Zn (black) aqueous. * denotes stainless steel diffraction peaks from the current collector.

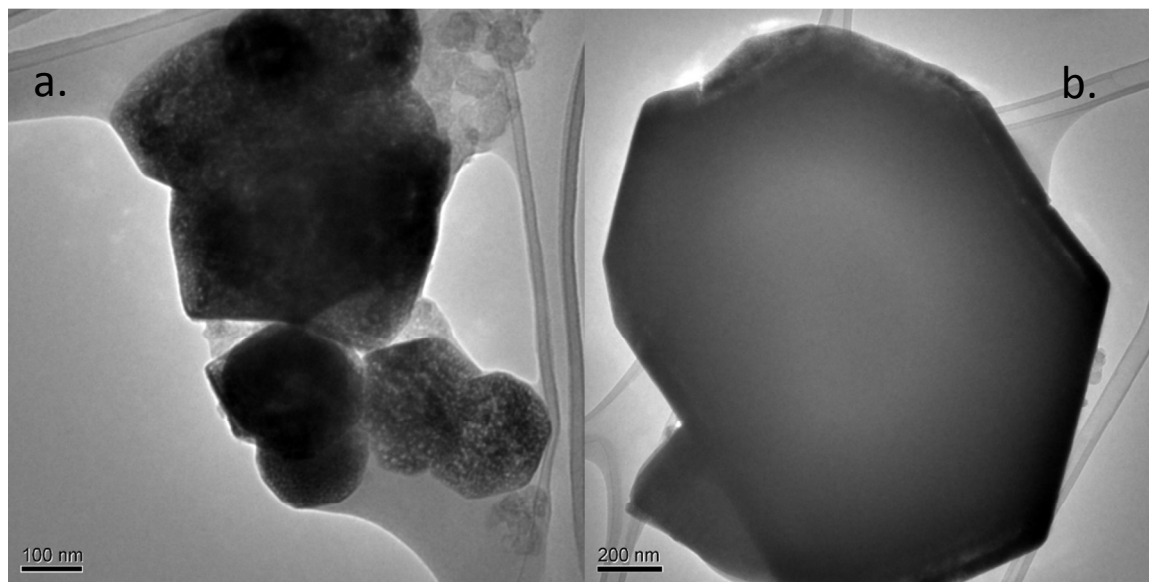


Figure S6. TEM image of reduced spinel Mn_2O_4 (a) in acidic 1 M $\text{Ca}(\text{NO}_3)_2$ and (b) 1 M $\text{Zn}(\text{NO}_3)_2$ aqueous electrolytes.