

Supporting Information

Catalytic carbonization of an uncarbonizable precursor by transition metals in olivine cathode materials of lithium ion batteries

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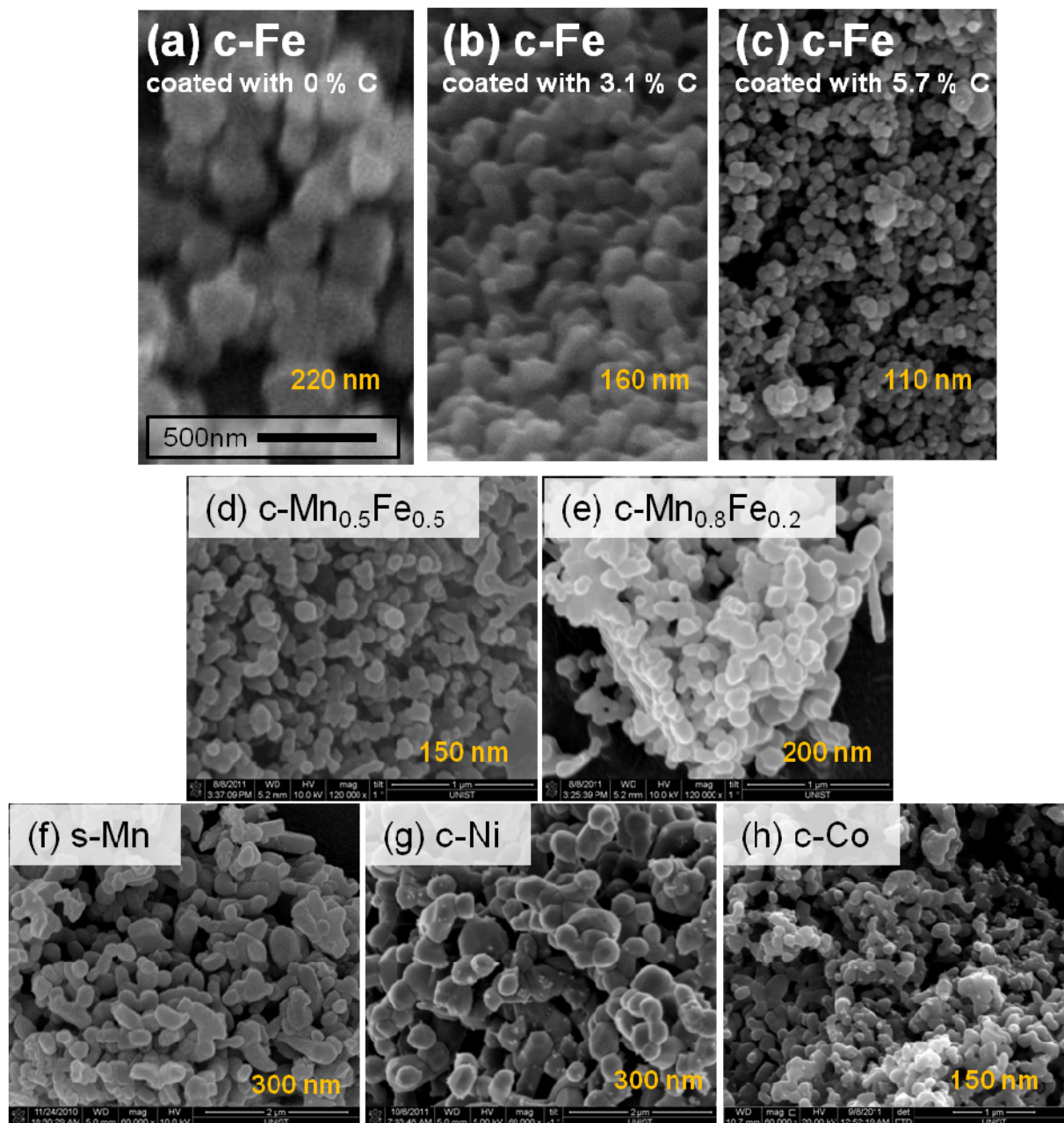


Fig. S1 Scanning electron microscopic photos of LiMePO₄ particles. Me and representative dimension of the particles are indicated.

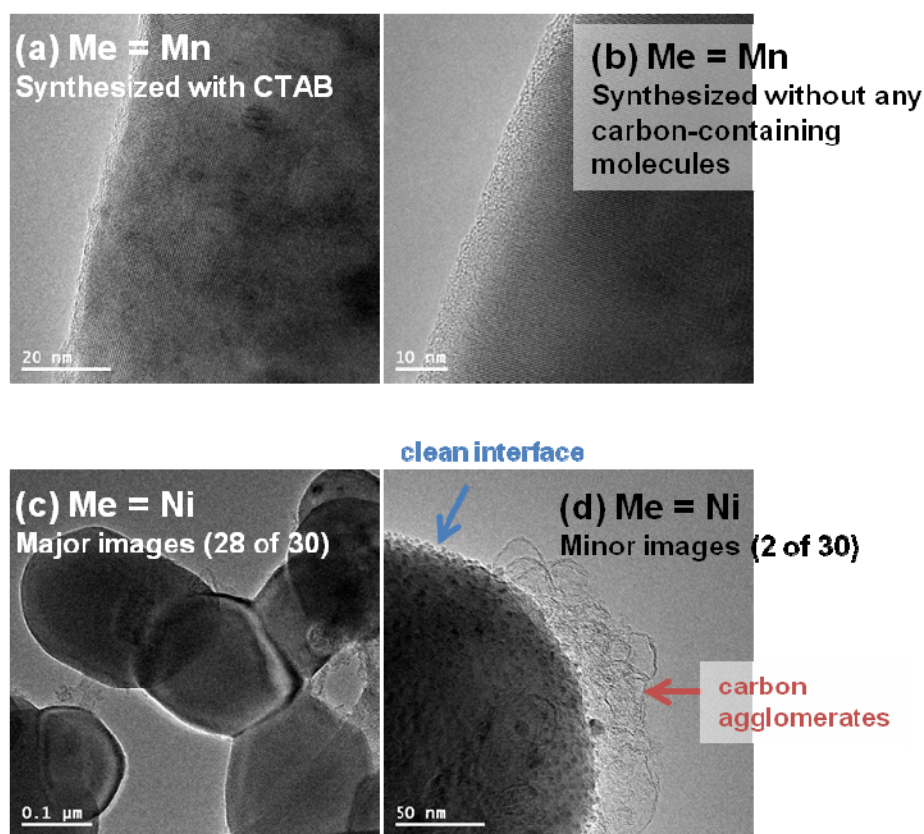


Fig. S2 Transmission electron microscopic photos of LiMePO_4 particles.

- Me = Mn
For clarity, two samples are compared. One is synthesized with CTAB while the other is prepared without any carbon-containing compounds. The latter sample means that we cannot have carbon coating layer. Therefore, no carbon coating can be mentioned with LiMnPO_4 synthesized with CTAB.
- Me = Ni
Most of parts we investigated (more than 93 %) have clear interface. However, some carbon agglomerates were observed in minor parts.

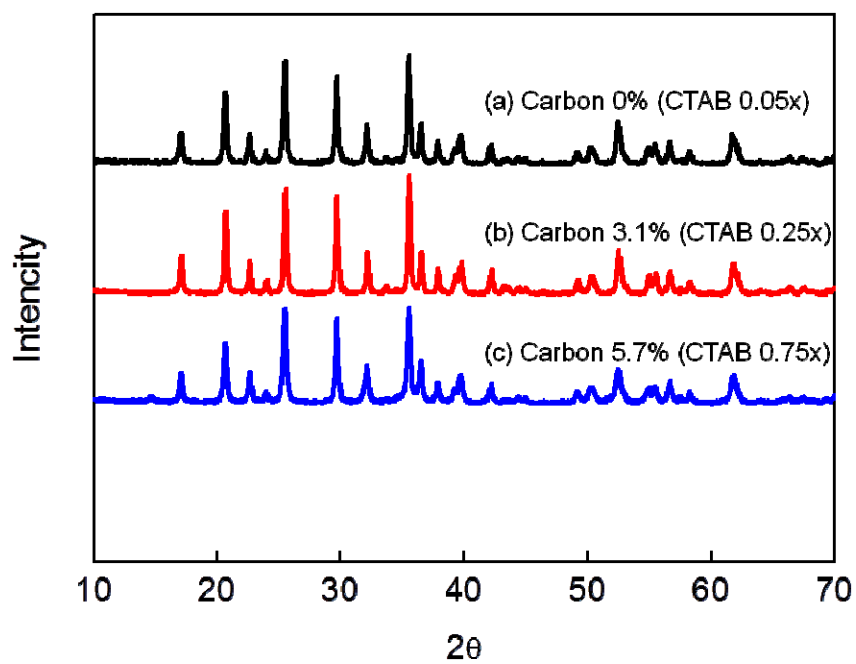


Fig. S3 X-ray diffraction patterns of LiFePO₄ coated with various amounts of carbon.

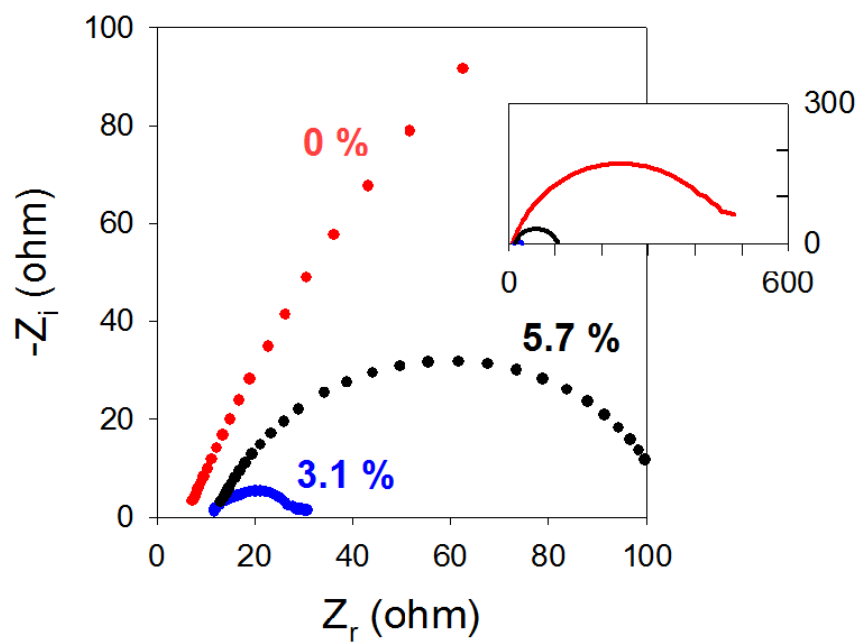


Fig. S4 Electrochemical impedance spectra of cells with LiFePO₄ particles carbon-coated at (a) 0, (b) 3.1 and (c) 5.7 wt. %.