Supporting Information

Porous Mn_2O_3 microcubes with exposed {001} facets as electrode for lithium ion batteries

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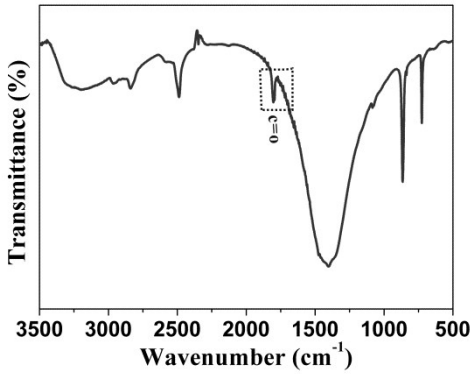

Fig. S1 FTIR spectra of $MnCO_3$ cube.

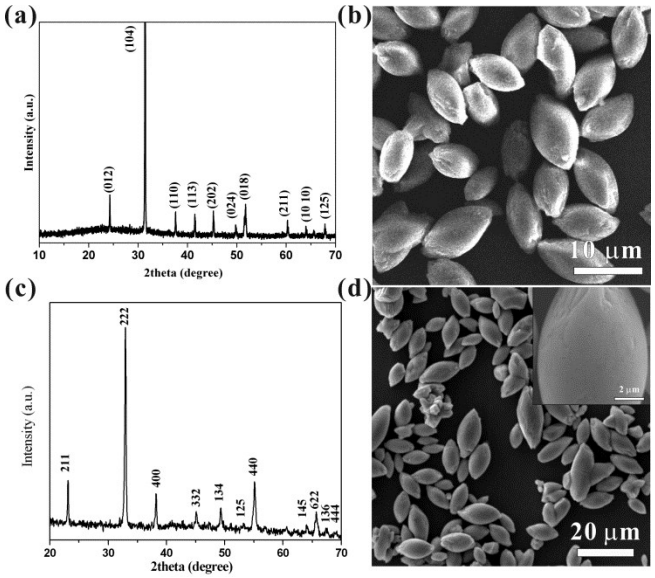

Fig. S2 (a-b) the XRD pattern and SEM images of $MnCO_3$ micro-ellipsoid prepared in absence of PVP; (c) XRD pattern and SEM image of $MnCO_3$ micro-ellipsoid calcined at 500 °C for 30 min (PME-500).

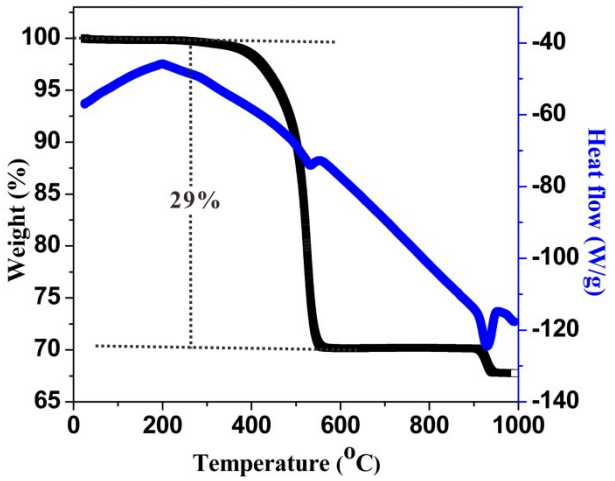

Fig. S3 TGA curves of the as-obtained $MnCO_3$ microcubes.

For the TGA curve of the $MnCO_3$ cubes, an obvious weight loss of 29% occurred at around 500 °C. The theoretical weight loss value of $MnCO_3$ to Mn_2O_3 is 25%, another 4% weight loss may be ascribed to carbonize PVP at high temperature.

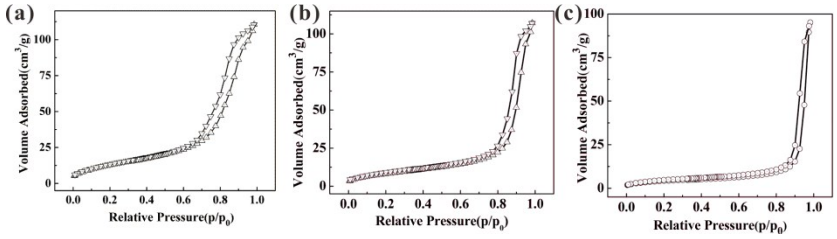

Fig. S4 The N_2 adsorption-desorption isotherms of $MnCO_3$ cube sintered at different temperature for 30 min (a) 550 °C; (b) 600 °C; (c) 650 °C.

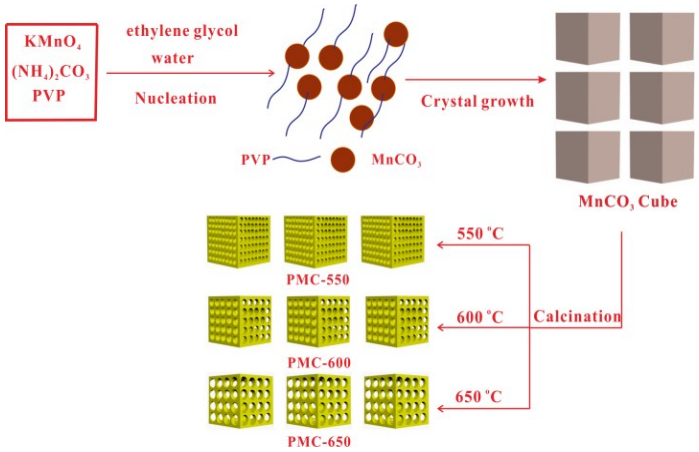

Fig. S5 Proposed growth mechanism for the formation of porous Mn_2O_3 microcubes.

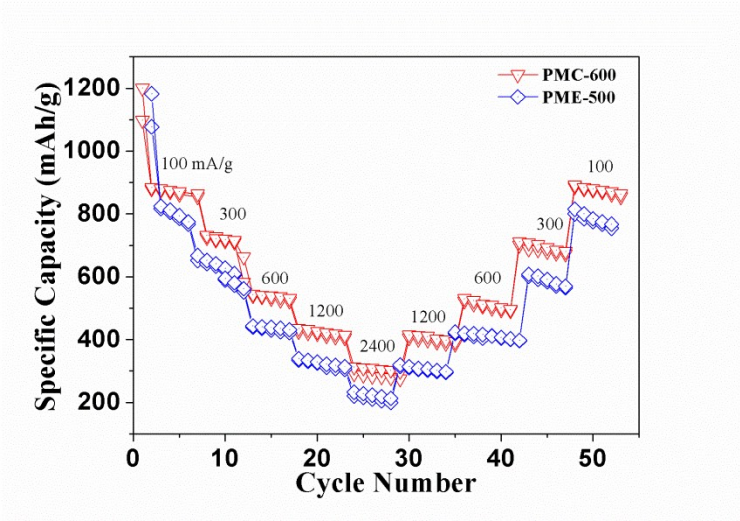

Fig. S6 Rate performance of PMC-500 and PME-500 at different current densities from 100 – 2400 mA·g^{-1}.

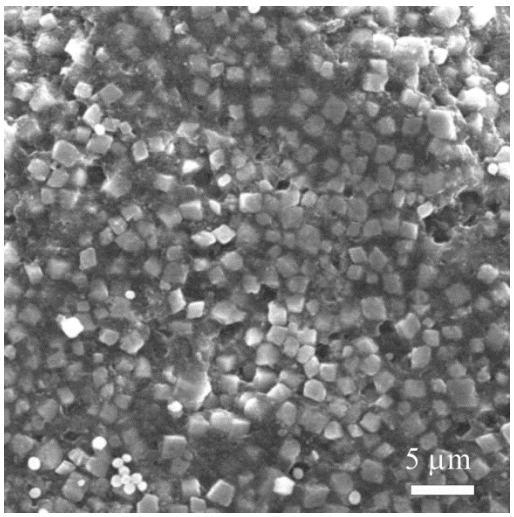

Fig. S7 SEM image of PMC-500 electrode after 50 discharge-charge cycles.