Electronic Supplementary Material (ESI) for RSC Advances

X-ray diffraction study of $LiFePO_4$ synthesized by hydrothermal method

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Fig. S1. Distribution diagram of samples synthesized at different pH values.

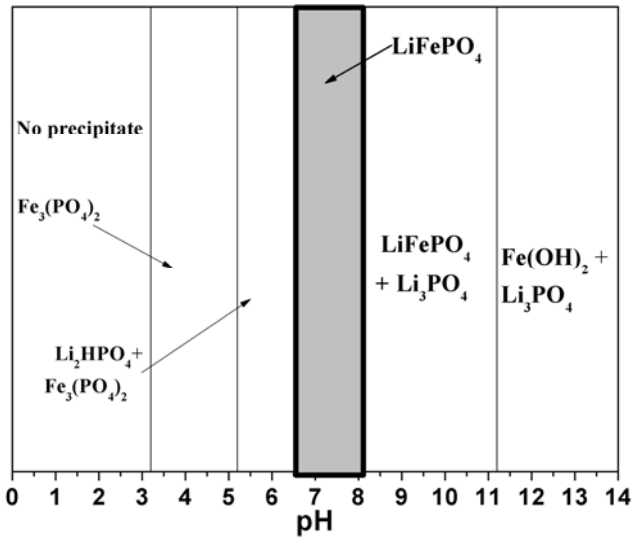

Fig.S2 (a) The normal crystal structure of olivine $LiFePO_4$; (b) the crystal structure of olivine $LiFePO_4$ with Fe on Li sites.

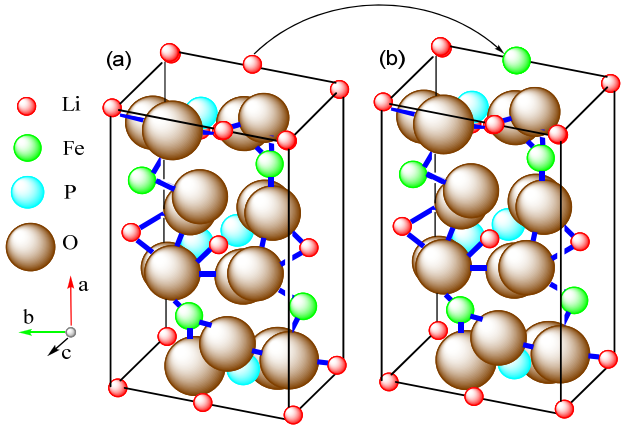

Fig. S3 (a) and (c) Curved pathway for Li ion motion; (b) the blocked tunnel absence of Fe on Li sites

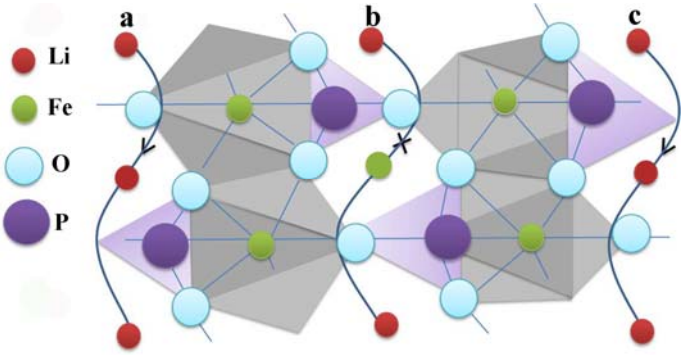

Fig. S4 Initial charge and discharge curves of samples prepared at different temperatures （then calcined at 750 ℃ for 1 h） at the current density of 0.1C in the potential range from 2.2 to 4.2 V.

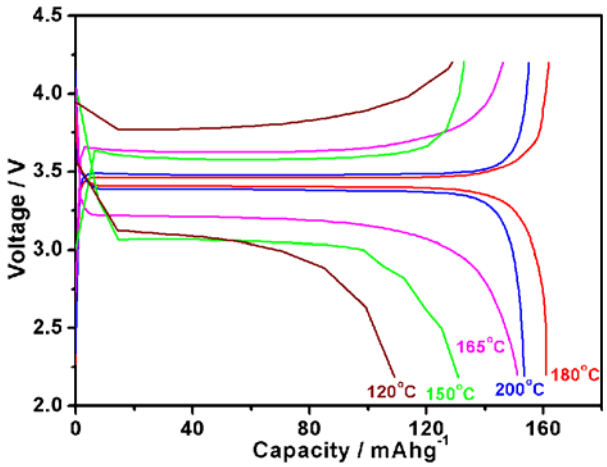

Fig. S5 Initial charge and discharge curves of samples prepared at different time（ then calcined at 750 °C for 1 h ） at the current density of 0.1C in the potential range from 2.2 to 4.2 V.