Electronic Supplementary Material (ESI) for Energy & Environmental Science

Supporting information (SI)

Soft X-ray XANES Studies of Various Phases Relating to $LiFePO_4$ Based Cathode Materials

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	A	B	C	D	E	F
Li_3PO_4	136.3	137.3	138.4			146.2
$Li_4P_2O_7$	136.2	137.2	138.4			146.2
$LiPO_3$	136.3	137.3	138.4			146.2
c-LFP	136.1	137.2	138.8	139.2	141.4	146.2
d-LFP	136.0	137.0	138.8	139.2	141.4	146.2
a-LFP	136.1	137.0	138.8	139.2	141.4	146.2
$Fe_3(PO_4)_2$	136.3		139.3			147
$FePO_4$	136.8	137.8	139.3			147

Table S1 Energy position of P $L_{2,3}$-edge XANES spectra of the P containing compound in the $LiFePO_4$ based cathode materials.

	A	B
Li_3PO_4	532.0	536.3
$Li_4P_2O_7$	532.0	536.3
$LiPO_3$	532.0	536.3
c-LFP	531.8	537.1
d-LFP	531.8	537.1
a-LFP	531.8	537.1
$Fe_3(PO_4)_2$	531.8	537.1
$FePO_4$	531.8	537.1

Table S2 Energy position of O K-edge XANES spectra of the O containing compound in the $LiFePO_4$ based cathode materials.

	A	B	C	D
c-LFP	707.1	708.5	719.9	721.6
d-LFP	707.1	708.5	719.9	721.62
a-LFP	707.1	708.5	719.9	721.62
$Fe_3(PO_4)_2$	707.1	708.5	719.9	721.62
$FePO_4$	707.1	708.5	719.9	721.62
Fe_2O_3	707.1	708.5	719.9	721.62

Table S3 Energy position of Fe $L_{2,3}$-edge XANES spectra of the Fe containing compound in the $LiFePO_4$ based cathode materials.