

## Supporting Information

### A novel highly Crystalline $\text{Fe}_4(\text{Fe}(\text{CN})_6)_3$ Concave Cube Anode Material for Li-Ion Batteries with High Capacity and Long Life

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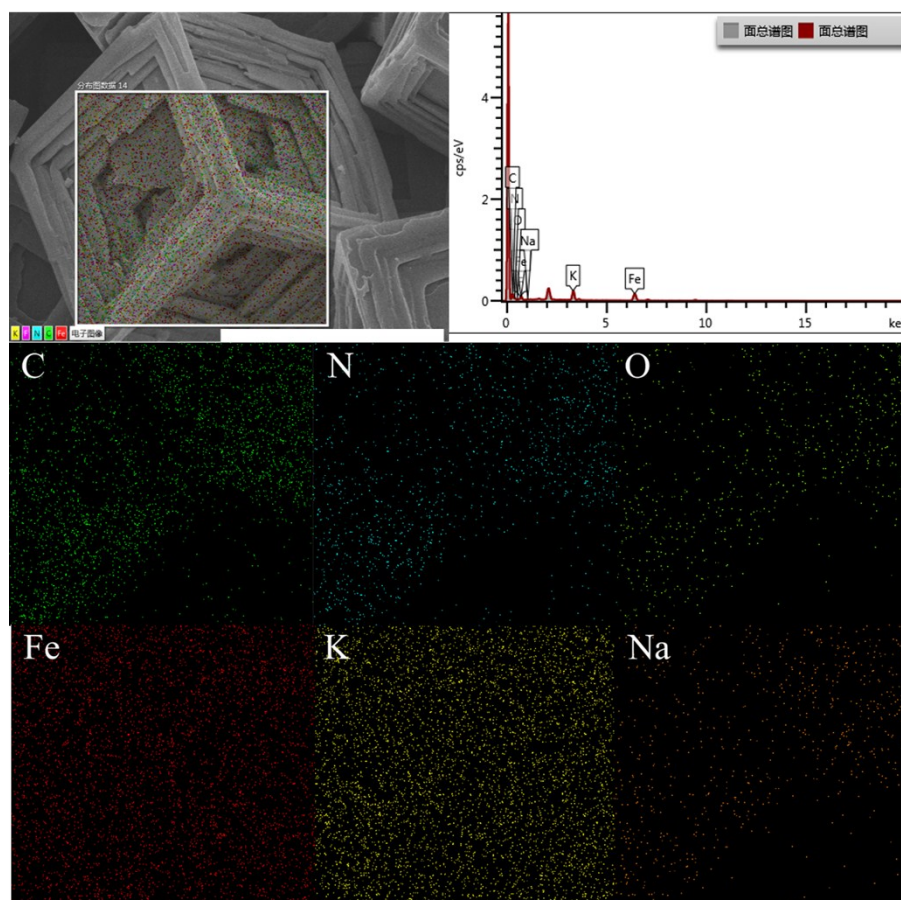


Figure. S1 EDX mapping images of PB microfames

**Table S1.** Element content by EDX

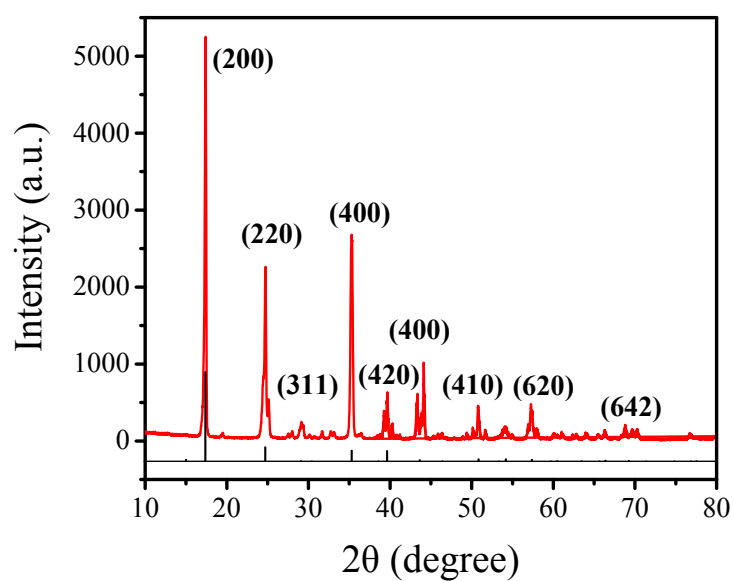
Element	Mass percent (wt%)	Atomic percent (%)
C	18.16	37.33
N	15.27	26.92
O	2.97	4.59
Na	0.19	0.20
K	15.47	9.77
Fe	47.95	21.20
Total:	100.00	100.00

**Table S2.** Elemental contents by Elemental analysis during different test

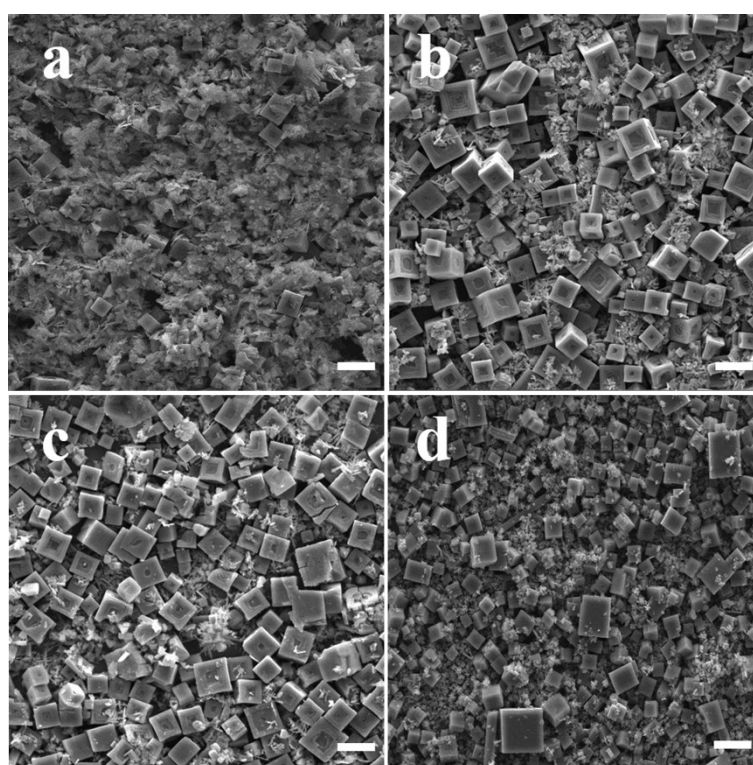
	N (wt%)	C (wt%)	H (wt%)	N:C (molar ratio)
	29.420	22.800	1.482	1.106
	29.470	21.990	1.319	1.149
	28.570	21.130	1.157	1.159
	26.880	19.580	1.200	1.177
Average	28.585	21.375	1.290	1.146

**Table S3.** Elemental contents of FeFe(CN)<sub>6</sub> sample (weight percentage) by ICP-AES, Elemental analysis and TGA

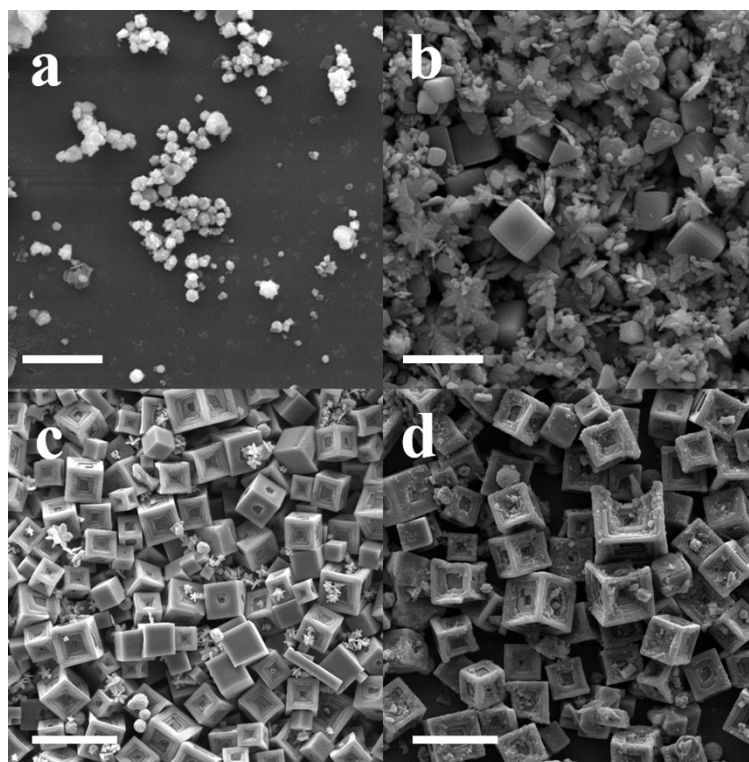
weight percentage	K	Na	Fe	C	N	H <sub>2</sub> O
	13.087	0.1	34.376	21.375	28.585	2.477



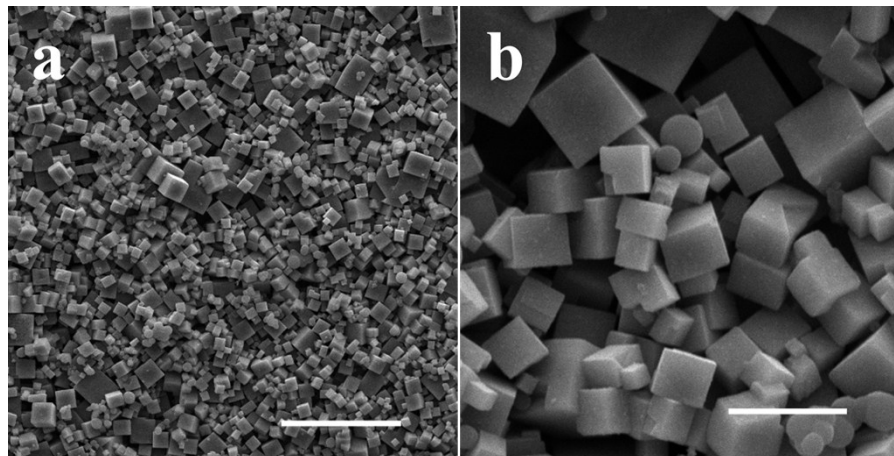
**Figure. S2** XRD characterization of the ball milled PB microfames



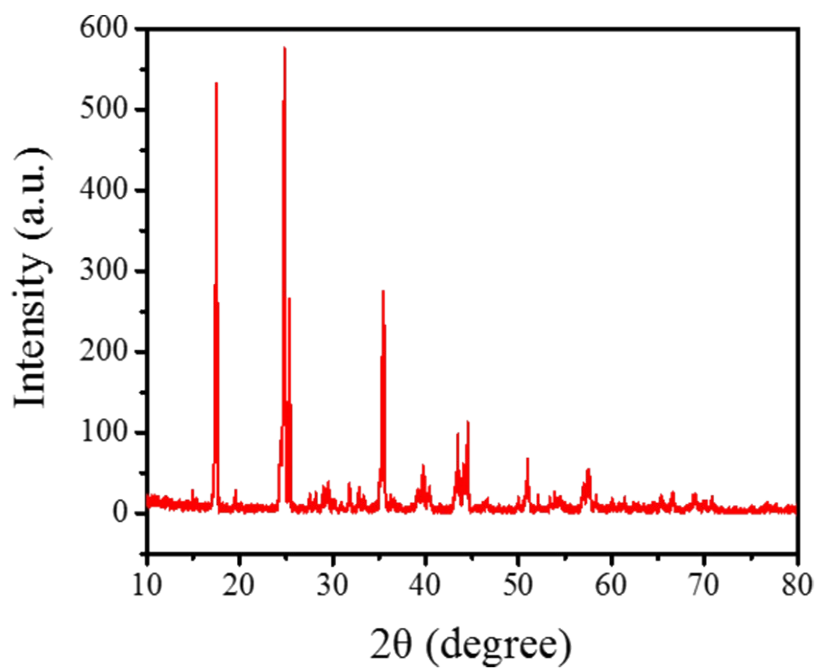
**Figure. S3** The morphology of PB material with different additive: (a) without any additive, (b) sodium chloride, (c) sodium bromide and (d) sodium iodide. The bars of the mages are 20  $\mu\text{m}$ .



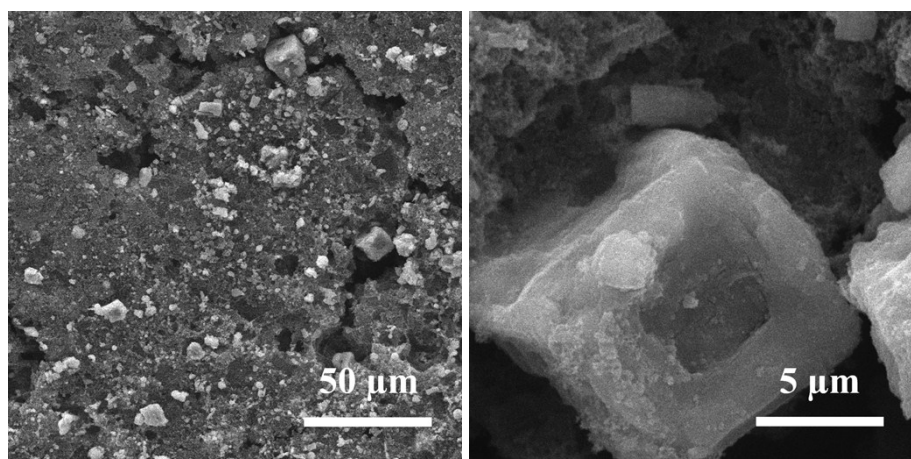
**Figure. S4** The morphology of PB material with different hydrothermal time: (a) 1 hour, (b) 2 hours, (c) 3 hours and (d) 12 hours. The bars of the mages are 20  $\mu\text{m}$ .



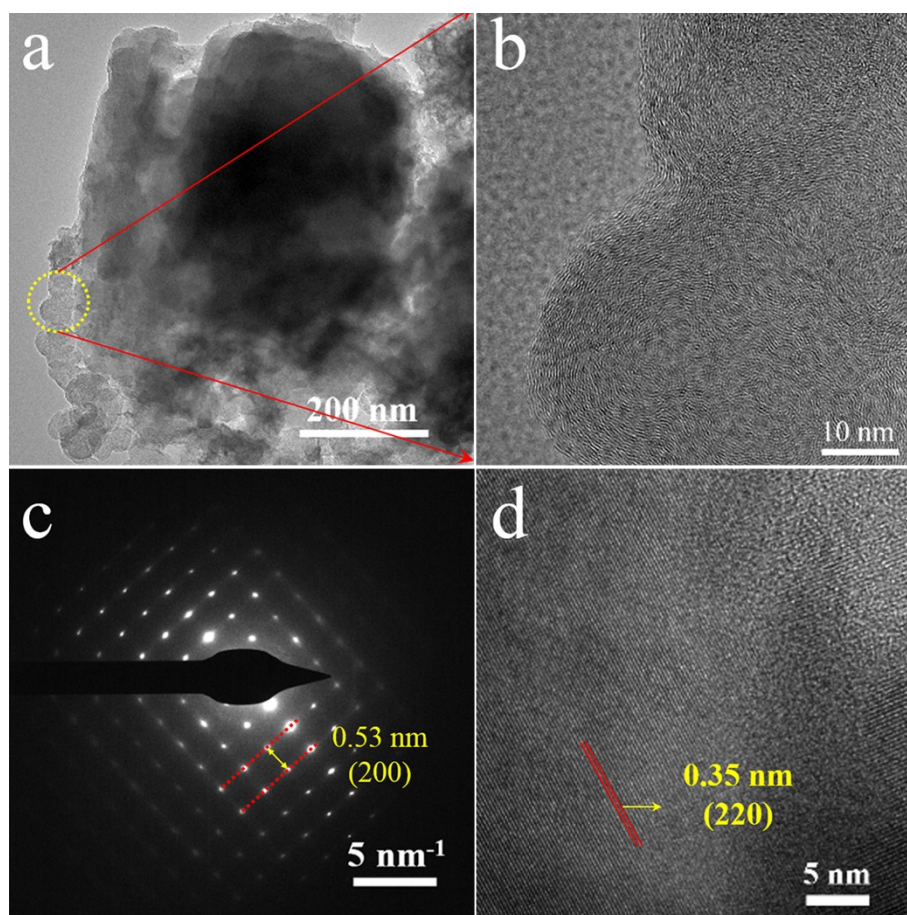
**Figure. S5** The morphology of PB cube. The scales in (a) and (b) are 50 and 10  $\mu\text{m}$ , respectively.



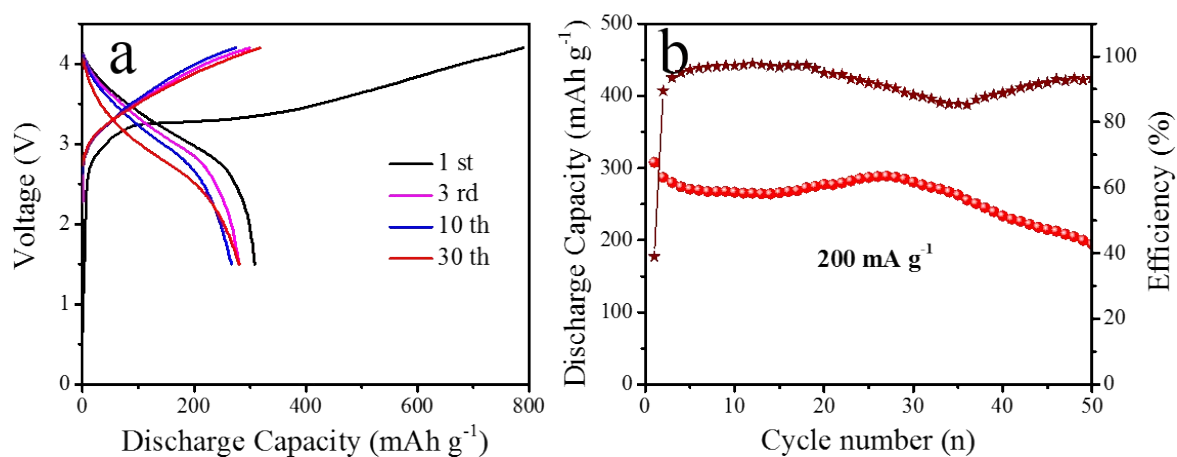
**Figure S6.** XRD patterns of PB cubes.



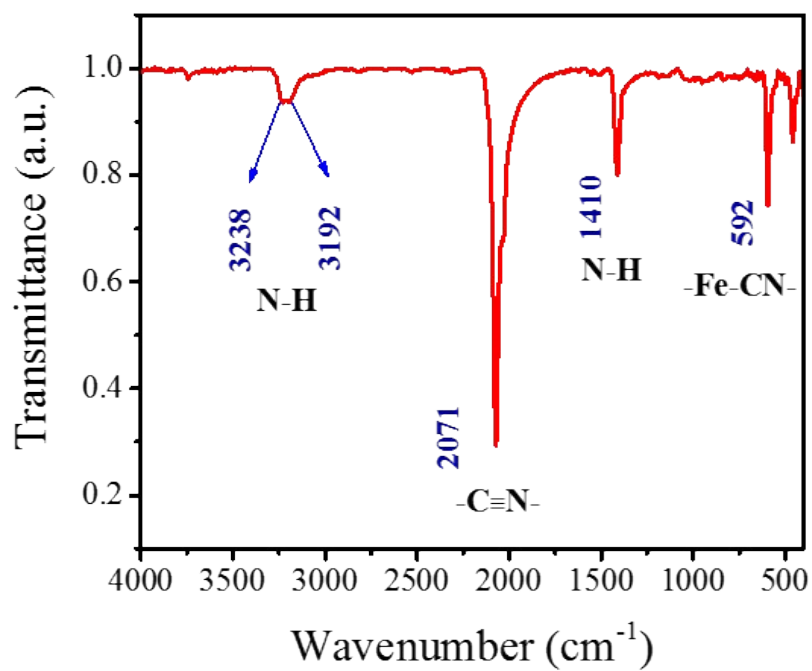
**Figure. S7** The morphology of PB microframes after cycling at a current density of  $100 \cdot \text{mA} \cdot \text{g}^{-1}$  for 100 cycles.



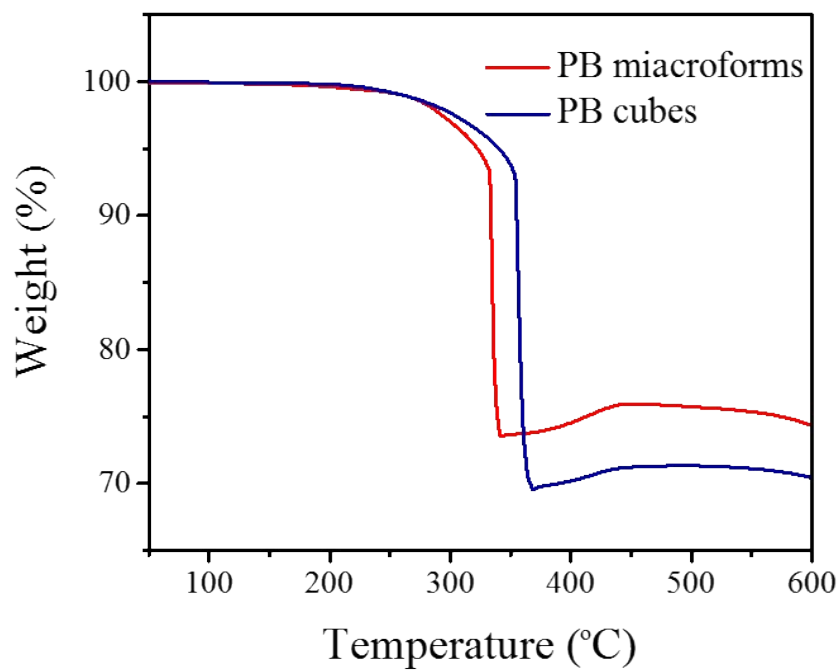
**Figure. S8** The morphological and crystal features of PB microframes after cycling at a current density of  $100 \text{ mA} \cdot \text{g}^{-1}$  for 100 cycles: TEM image (a), HR-TEM image of acetylene black (b); the SAED patterns (c), HR-TEM image of PB microframes (d)



**Figure S9.** Discharge-charge curves (a) and cyclic performance (b) for the PB microframes-LiCoO<sub>2</sub> full-cell at  $200 \text{ mA} \cdot \text{g}^{-1}$  between 1.5 and 4.2 V



**Figure S10.** FTIR spectrum of PB cubes.



**Figure S11.** TGA curves of PB microframes and PB cubes. The TGA test was conducted at a heating rate of 10 °C min<sup>-1</sup> under O<sub>2</sub> flow