Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Robust α-Fe_2O_3 nanorod arrays with optimized interstices as high-performance 3D anodes for high-rate lithium ion batteries

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Electronic supplementary information

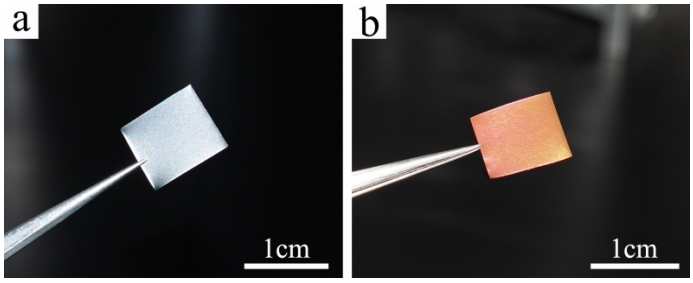

Fig. S1. Optical photographs of Ti foil: (a) bare, (b) after growth of α-Fe_2O_3 nanorod arrays.

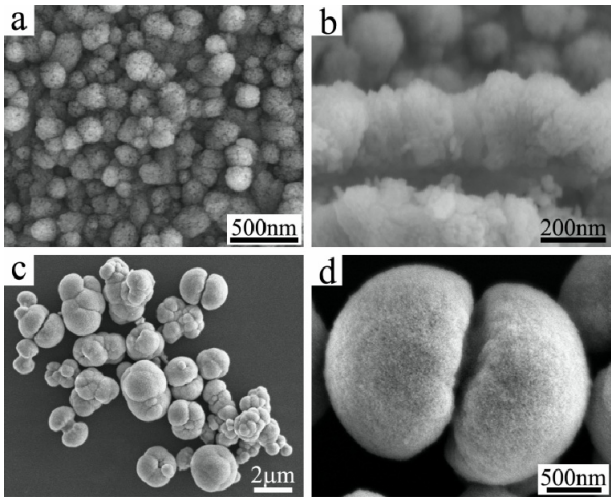

Fig. S2. SEM images of α-Fe_2O_3 products obtained with different concentrations of $Fe_2(SO_4)_3$: (a, b) 2.5 mM, (c, d) 15 mM.

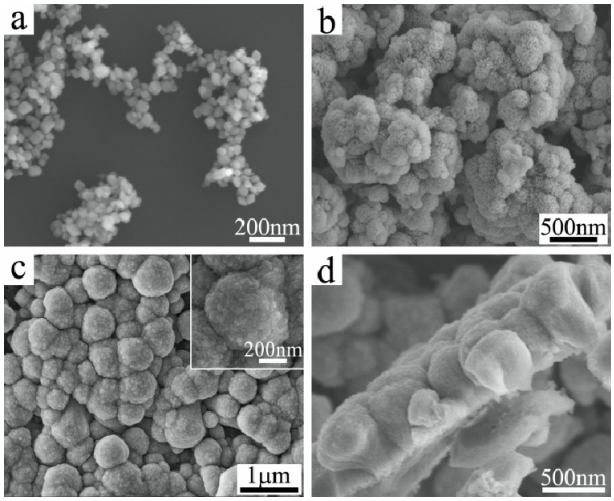

Fig. S3. SEM images of α-Fe_2O_3 products obtained with different concentrations of HAc: (a) 0 M, (b) 2.1 M, (c, d) 6.3 M.

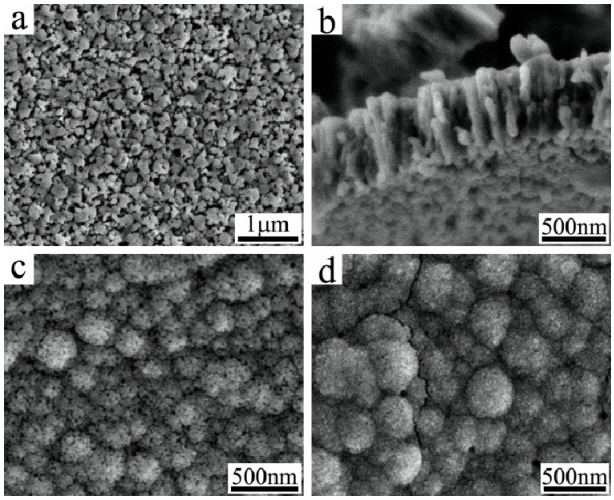

Fig. S4. SEM images of α-Fe_2O_3 nanorod arrays obtained with different concentrations of Na_2SO_4: (a, b) 0 M, (c) 0.3 M, and (d) 0.9 M.

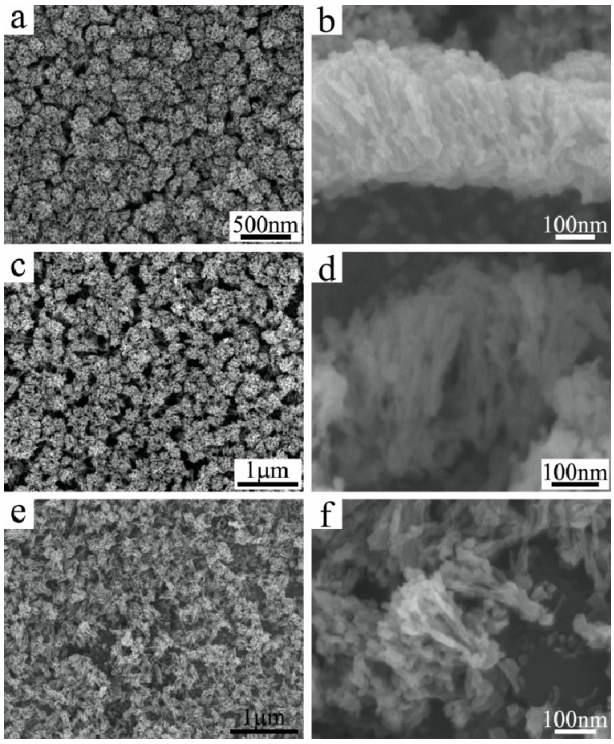

Fig. S5. SEM images of α-Fe_2O_3 nanorod arrays after etching by oxalic acid for different times: (a, b) 1 h, (c, d) 1.5 h, (e, f) 2 h.

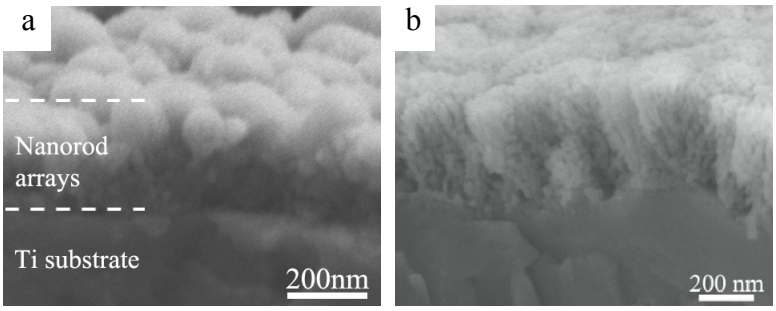

Fig. S6. Cross-sectional SEM images of α-Fe_2O_3 nanorod arrays on Ti foil before etching without calcination (a) and after etching for 1.5 h and calcination at 450 ºC for 30 min (b).

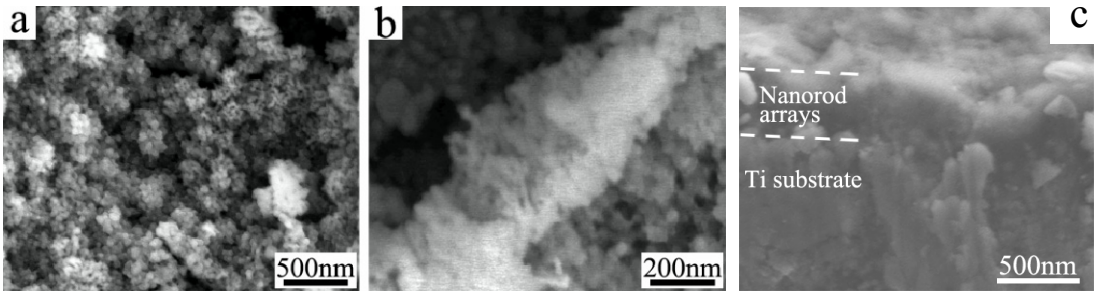

Fig. S7. (a, b) SEM images of Fe_2O_3-NA-1.5 after 500 cycles at 5 C and (c) cross-sectional SEM image of Fe_2O_3-NA-1.5 on Ti foil after 100 cycles at 5 C.

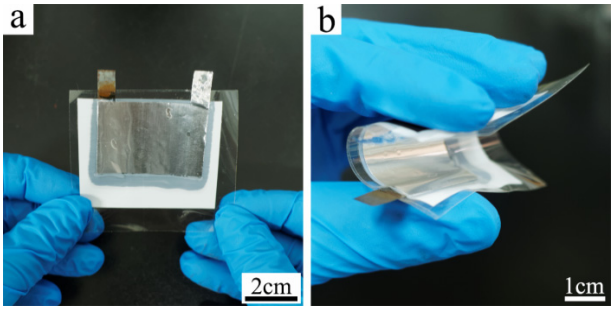

Fig. S8. Optical photographs of flexible LIB full battery.

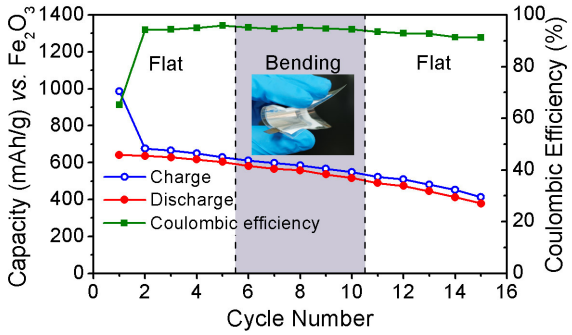

Fig. S9. Cycling performance of a flexible lithium ion battery at 5 C at varied bending states.