Supporting information

Flexible Free-Standing Fe_2O_3 Nanoparticle/Carbon Shells/Graphene Films for Advanced Li-Ion Batteries

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Content

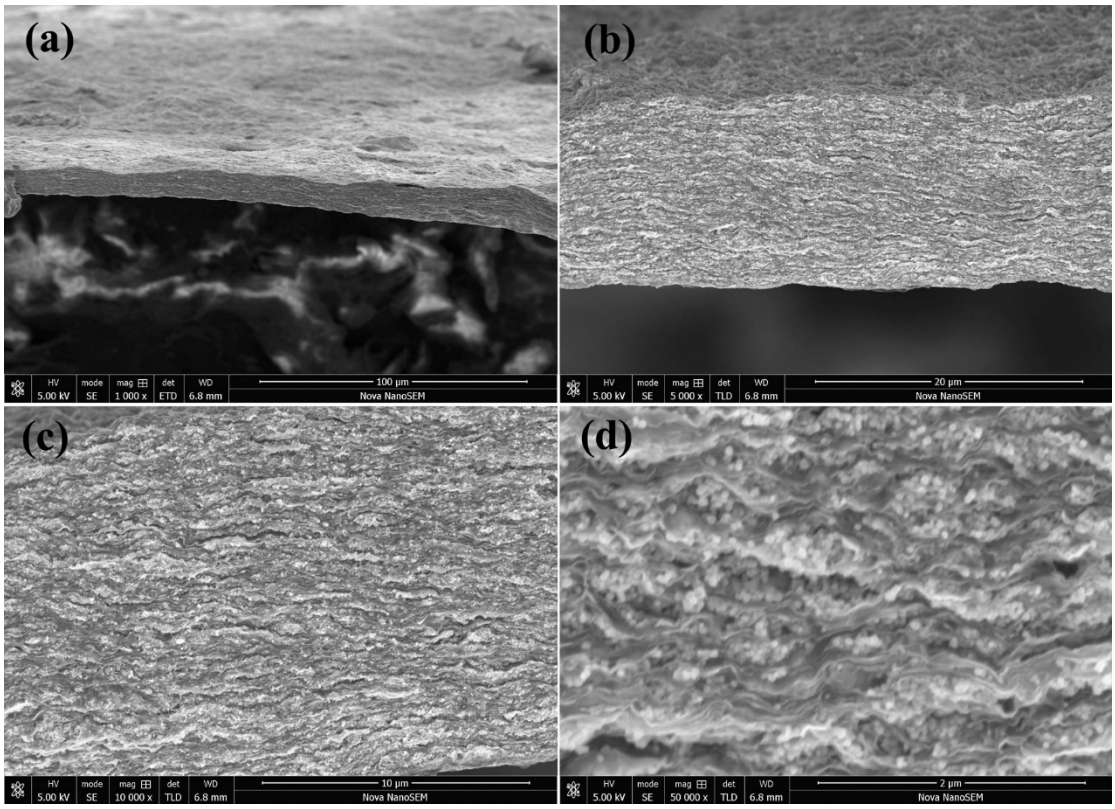

Figure S1. (a-d) Cross-sectional SEM images of the Fe_2O_3/C/RGO film at different magnifications.

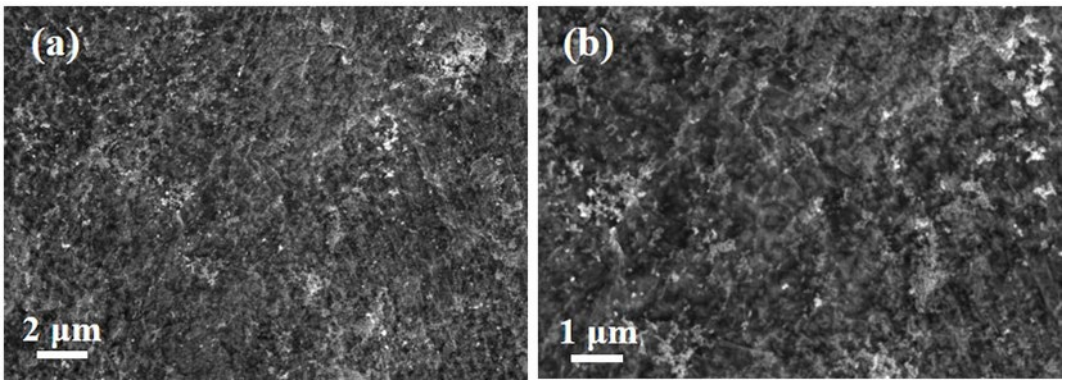

Figure S2. (a-b) Top view SEM images of the Fe_2O_3/RGO film at different magnifications.

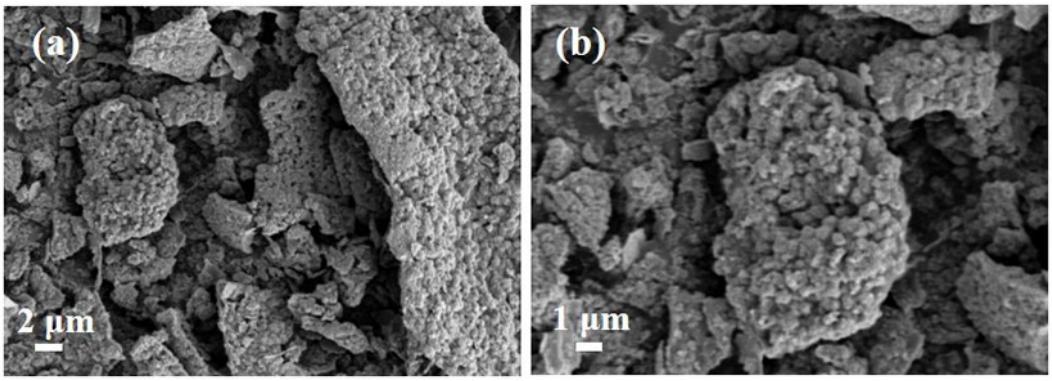

Figure S3. (a-b) SEM images of the Fe_2O_3/C powder at different magnifications.

Table S1. Simulation results of the EIS spectra using the Randle-type equivalent circuit model shown in Figure 5a.

Sample	Rs (Ω)	Rct (Ω)
Fe_2O_3/C/RGO	2.7	113
Fe_2O_3/C	3.1	584.7

Table S2. Lithium-storage performance of the Fe_2O_3/C/RGO film in this work compared with other reported Fe_xO_y-based anode materials in the literatures.

Anode materials	Reversible specific capacity	Current density	Cycle number	Refs.
	(mAh g^{-1})	(A g^{-1})	(cycles)	
γ-Fe_2O_3@$Ti_3C_2T_x$	466	2.0	800	[S1]
rGO/α-Fe_2O_3	613	0.1	100	[S2]
Fe_3O_4/C/Mn_3O_4	780	0.5	500	[S3]

Hollow Fe_3O_4/C	600	1.0	200	[S4]
Fe_3O_4/C nanofibers	761	0.5	300	[S5]
Fe_3O_4/C core-shell	833.5	0.5	350	[S6]
Fe_2O_3 nanotubes	613	1	50	[S7]
Fe_2O_3@0.2TiO_2	405.6	0.1	150	[S8]
Fe_2O_3/C/RGO	609	1.0	1000	**This work**

References

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