Electronic Supplementary Information

Effect of superoleophilic and superhydrophobic polysiloxane coating on the lithium storage properties of Fe_2O_3@C nanoparticles

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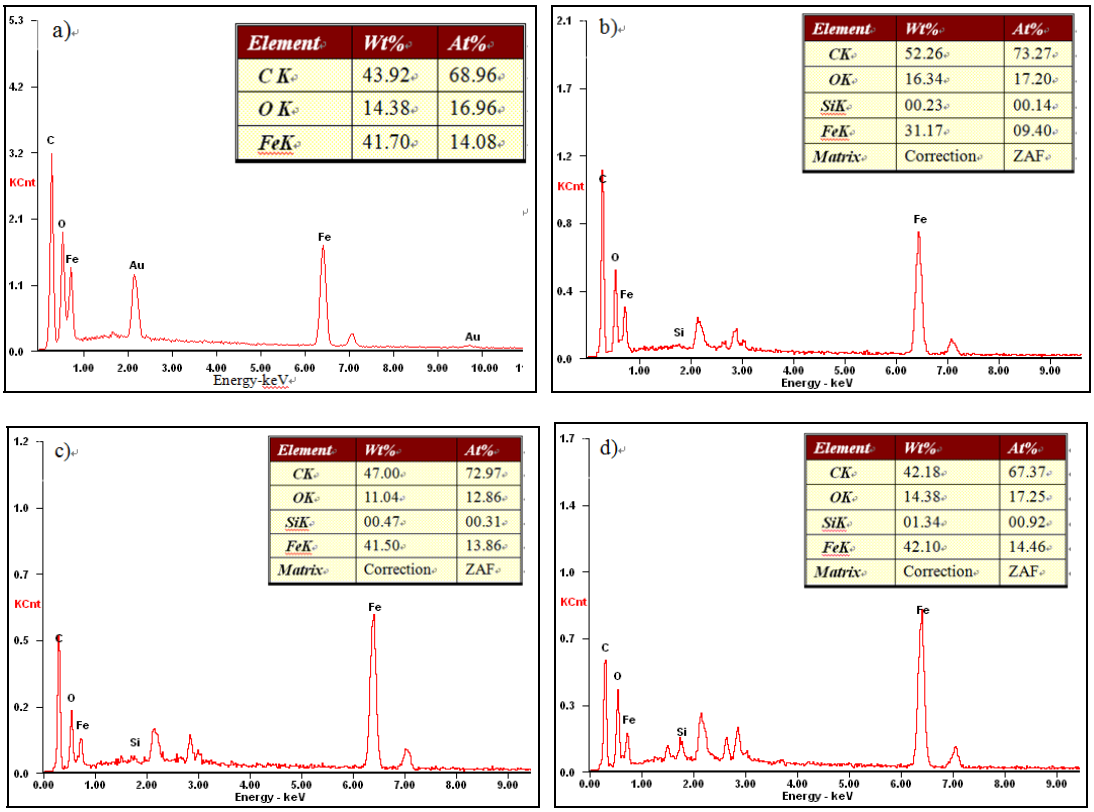
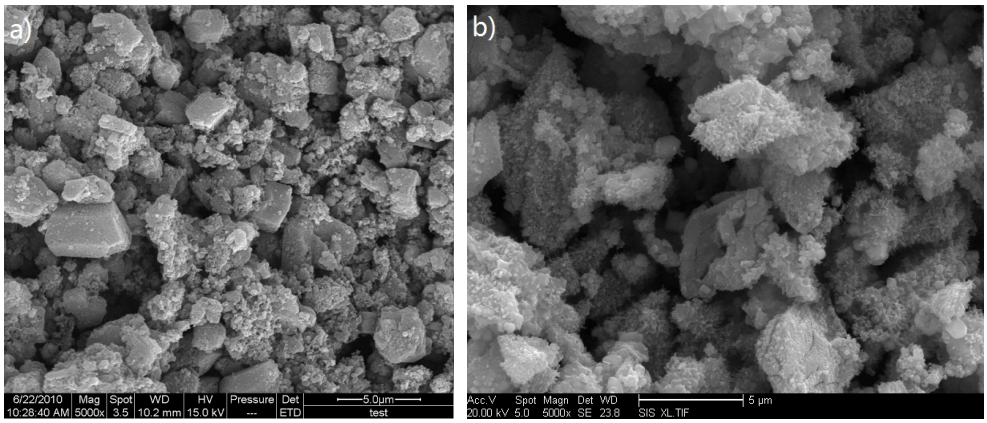


Figure S1. The EDX plots of the pristine (a), 0.5 mM methyltrichlorosilane (b), 1 mM methyltrichlorosilane (c) and 10 mM methyltrichlorosilane (d) treated Fe_2O_3@C nanoparticles.



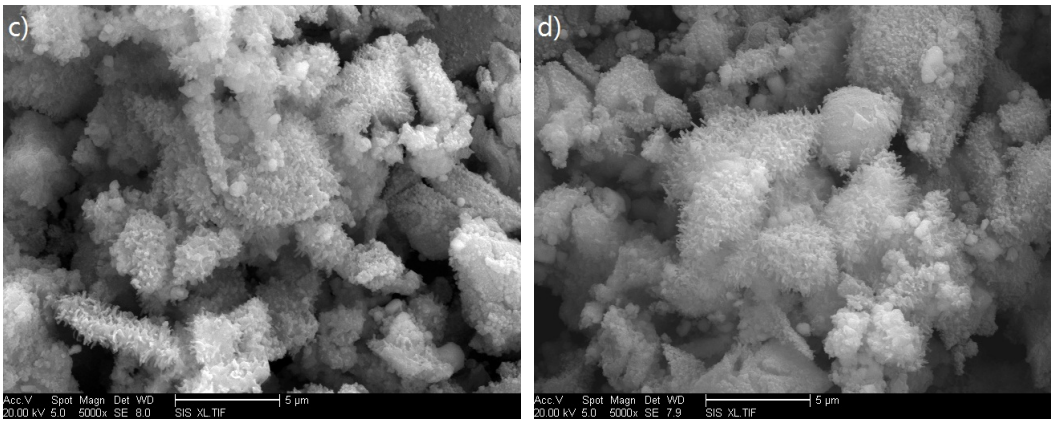


Figure S2. SEM images of the pristine (a) and 0.5 mM methyltrichlorosilane (b), 1 mM methyltrichlorosilane (c) and 10 mM methyltrichlorosilane (d) treated Fe_2O_3@C nanoparticles.

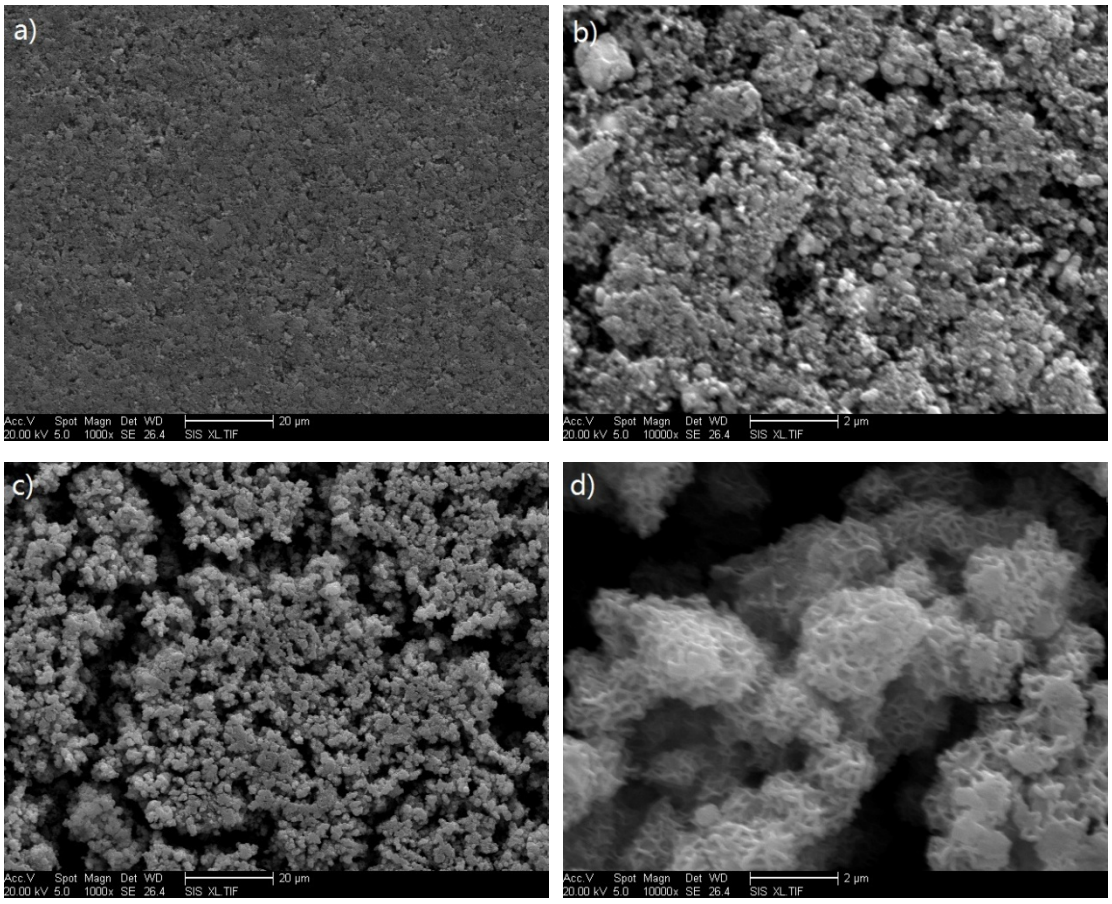


Figure S3. SEM images of the electrodes prepared from the pristine (a, b) and polysiloxane–coated (c, d) Fe_2O_3@C nanoparticles.

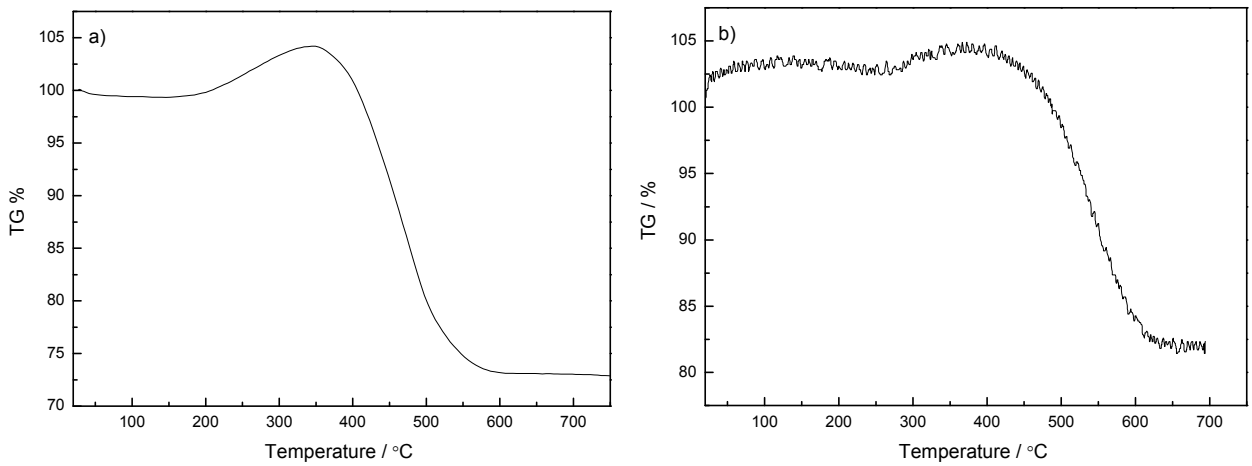


Figure S4. TGA curves of the pristine Fe_2O_3@C nanoparticles in air atmosphere (a) and polysiloxane–coated Fe_2O_3@C nanoparicles in argon atmosphere (b).

Table S1. Water contact angles and electrolyte wetting times for the electrodes prepared from the pristine and different concentrations methyltrichlorosilane treated Fe_2O_3@C nanoparticles.

	pristine	0.5 mM methyltrichlorosilane	1 mM methyltrichlorosilane	10 mM methyltrichlorosilane
Water contact angle	143±2°	153±2°	172±2°	152±3°
Wetting time to the electrolyte	8 s	3 s	1 s	3 s