

Morphology and properties of silica-based coatings with different functionalities for Fe₃O₄, ZnO and Al₂O₃ nanoparticles

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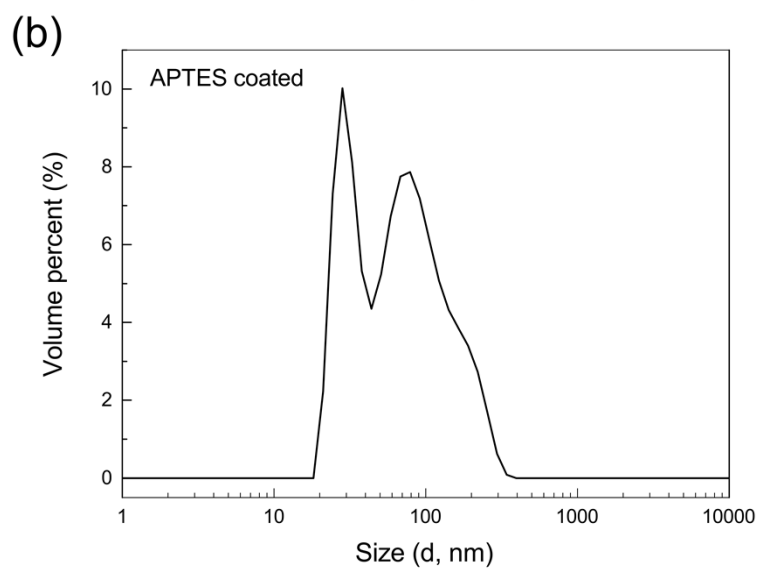
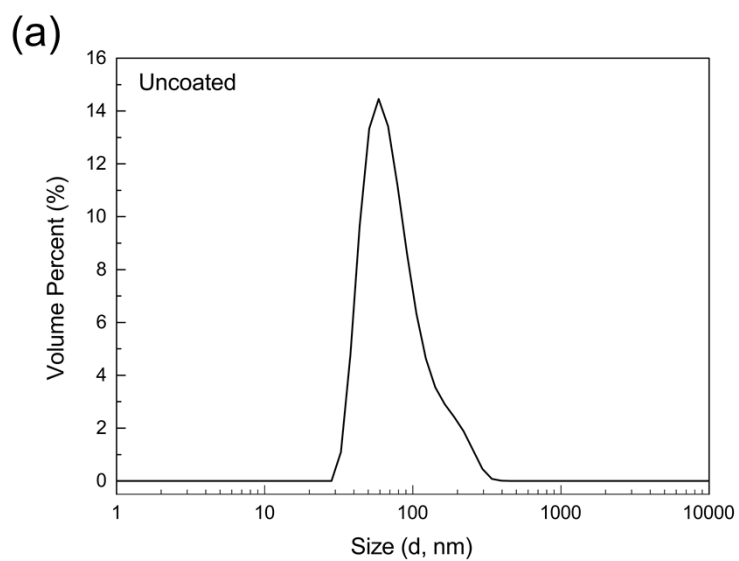


Fig. S1. Dynamic light scattering (DLS) of (a) uncoated Fe₃O₄ nanoparticles, (b) APTES coated Fe₃O₄ nanoparticles

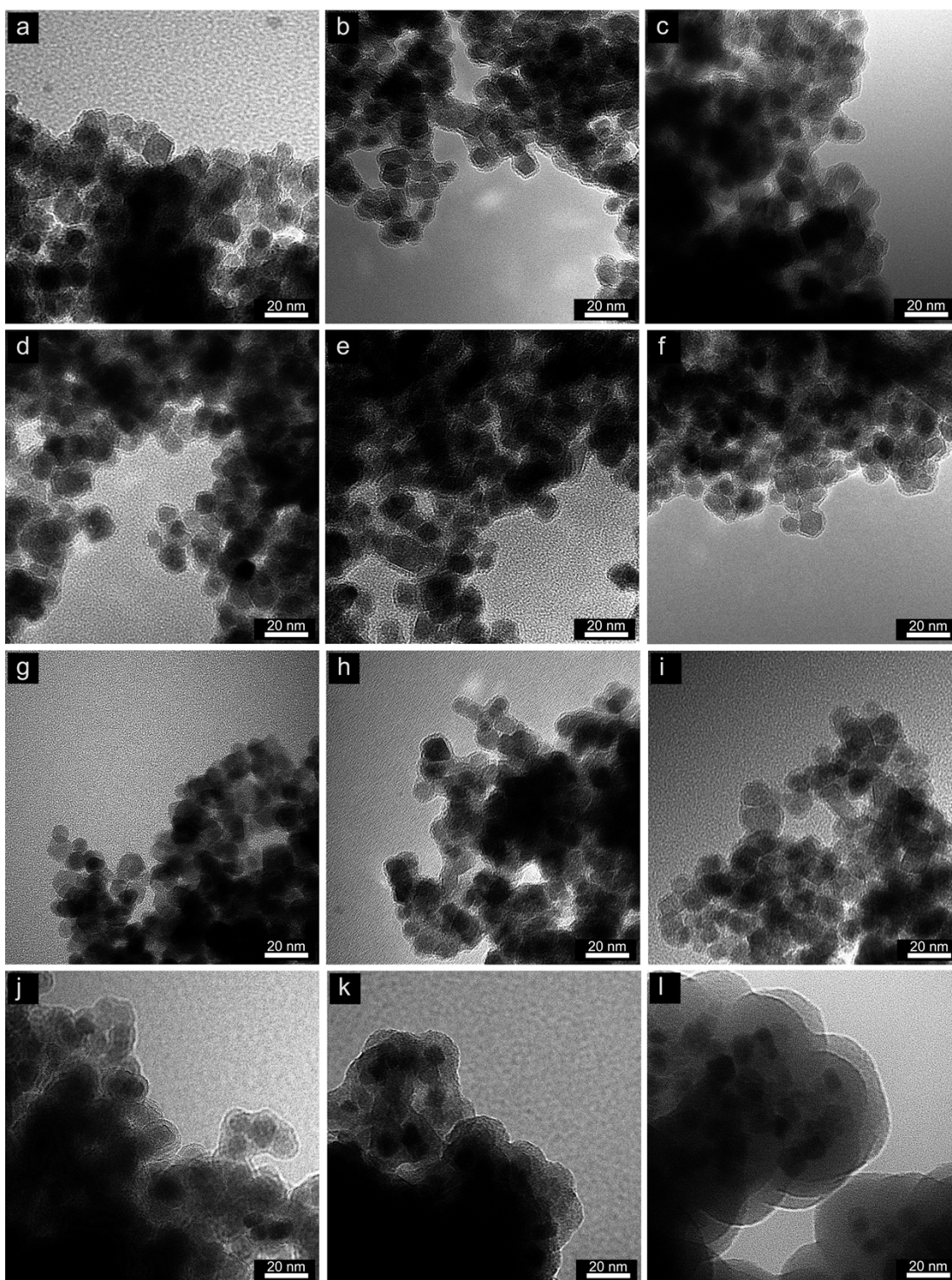


Fig. S2. TEM images of functional silane coated Fe_3O_4 nanoparticles. (a)-(c) APTES coating with the ammonia hydroxide amount of 50, 85, 190 μL , respectively; (d)-(f) MTES coating with the ammonia hydroxide amount of 50, 85, 190 μL , respectively; (g)-(i) OTES coating with the ammonia hydroxide amount of 50, 85, 190 μL , respectively; (j)-(l) TEOS coating with the ammonia hydroxide amount of 50, 85, 190 μL respectively. All the scale bars in the TEM images are 20 nm.

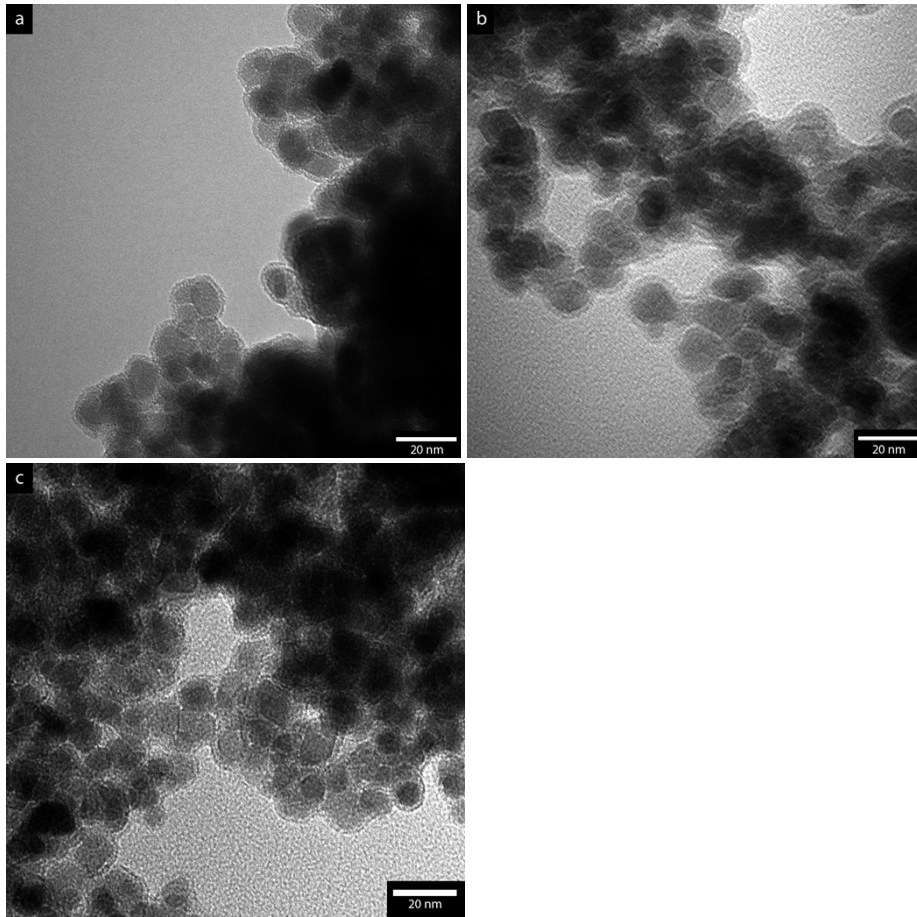


Fig. S3. Fe₃O₄ nanoparticles coated the silane volume of 0.36 mL, (a) APTES, (b) MTMS, (c) OTES.

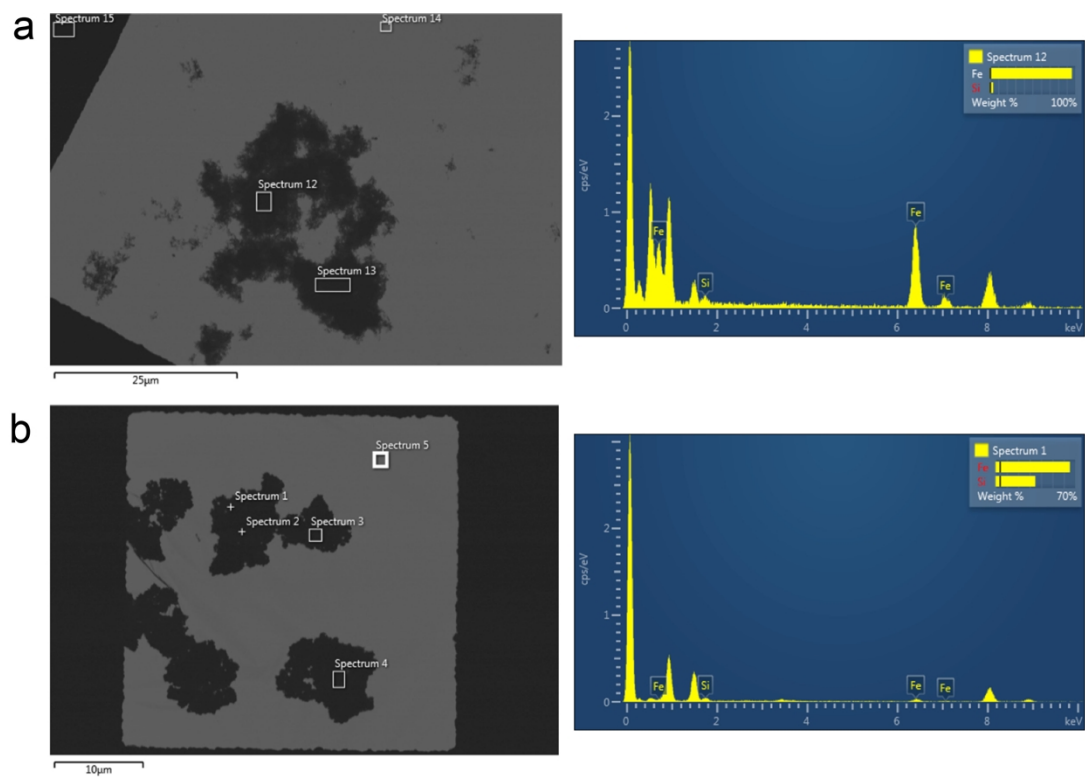


Fig. S4. SEM image and corresponding EDS of (a) OTES coated Fe_3O_4 nanoparticles; (b) TEOS coated Fe_3O_4 nanoparticles. Si/Fe ratio: 0.022 and 1.8 (average), respectively.