

Fig.1 the TEM image of Fe_3O_4 nanoparticles

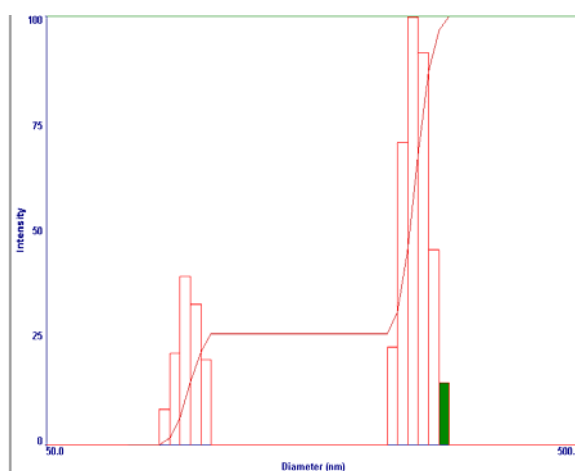


Fig.2 the size-diameter distribution of Fe_3O_4 -HCPT in 0.4 M NaCl

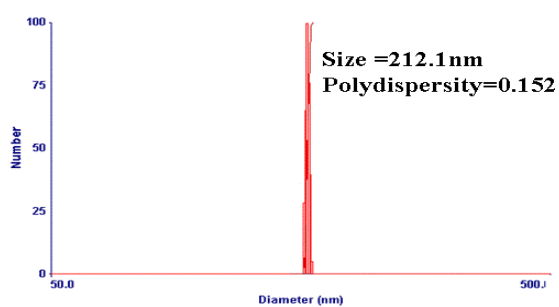
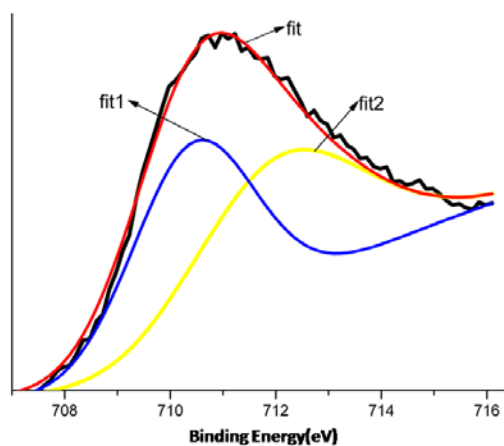
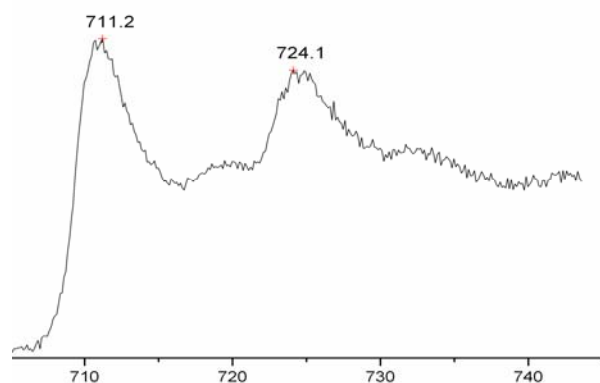


Fig.3 the size-diameter distribution of Fe_3O_4 -HCPT@ SiO_2 in 0.4 M NaCl

In order to confirm purity of Fe_3O_4 nanoparticles, The XPS of Fe_3O_4 nanoparticles have been carried out. The experimental results show our product is not Fe_2O_3 but Fe_3O_4 , there are some FeOOH on the surface of the Fe_3O_4 . The figure was as followed:



Experimental data are black. the red lines are fitted curves using two Gaussian-Lorentzian mixed peaks, one for the iron component of FeOOH (yellow line at 711.99eV) and the other for the iron component of Fe₃O₄ (blue line at 710.38 eV).

Curve Fit Summary

Filename: Fe₃O₄

Area: 1

Region: 3

Comment:

Goodness of Fit: 1.520

Number of Completed Iterations: 8

Band No.	Peak Pos.	Delta	Height	FWHM	% Gauss	Area	Total Area
2	711.99	1.61	831	3.88	84	3699	50.48
1	710.38	0.00	1239	2.75	100	3628	49.52