Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information (ESI†)

Water-dispersible Polyphosphate Grafted Fe_3O_4 Nanomagnets for Cancer Therapy

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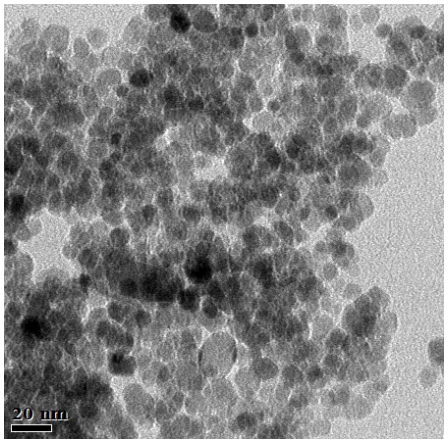

Fig. S1. TEM image of bare MNP.

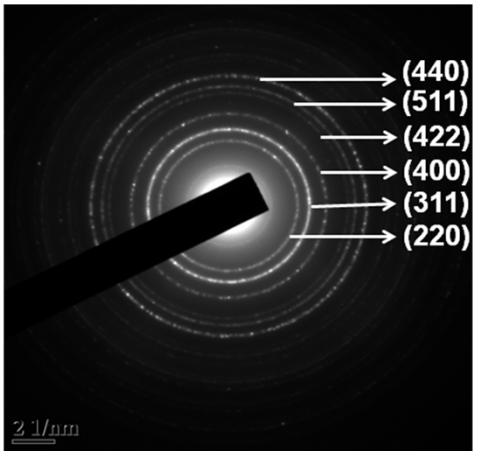

Fig. S2. A typical selected area electron diffraction pattern of PPNM.

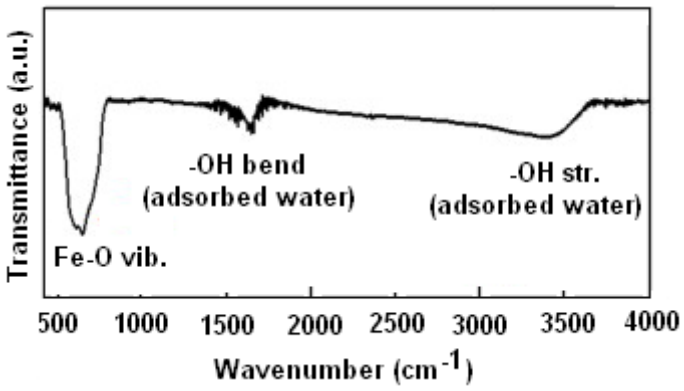

Fig. S3. FTIR spectrum of bare Fe_3O_4 nanoparticles. The –OH bending and stretching modes are observed in FTIR spectrum of bare Fe_3O_4 nanoparticles is due to the adsorption of water molecules on their surface.

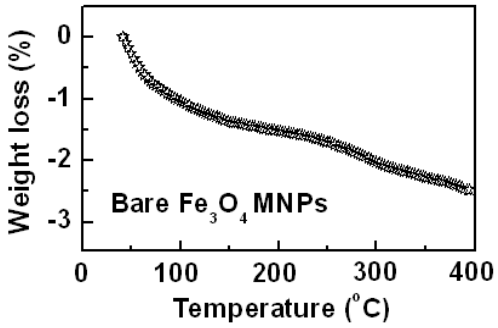

Fig. S4. TGA plot of bare Fe_3O_4 nanoparticles (TGA plot shows a total weight loss of about 2.5% over the temperature range from 40 to 400 ˚C. This might be due to the loss of residual water and absorbed hydroxyl groups on the surface of Fe_3O_4 nanoparticles due to aqueous media synthesis).

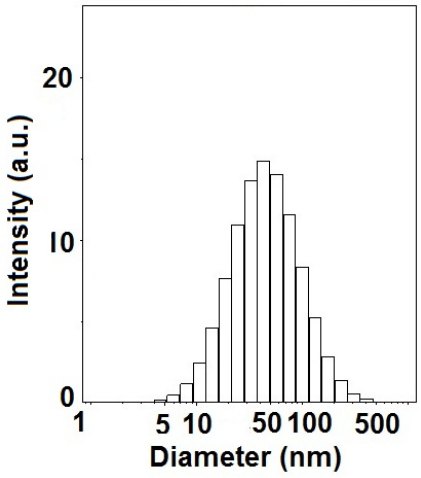

Fig. S5. DLS plot of aqueous suspension of PPNM showing mean hydrodynamic diameter of 43 nm).

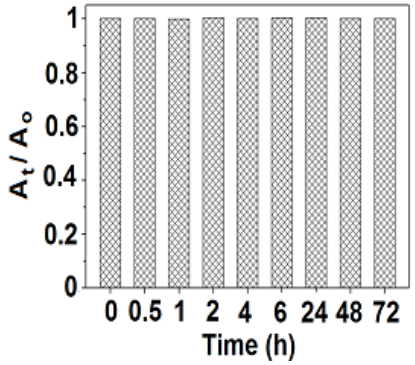

Fig. S6. Normalized UV absorbance (A_t/A_0) vs. time plot of PPNM (0.05 mg/ml) at wavelength of 350 nm in aqueous (A_t = absorbance at time 't' and A_0 = Absorbance at t=0).

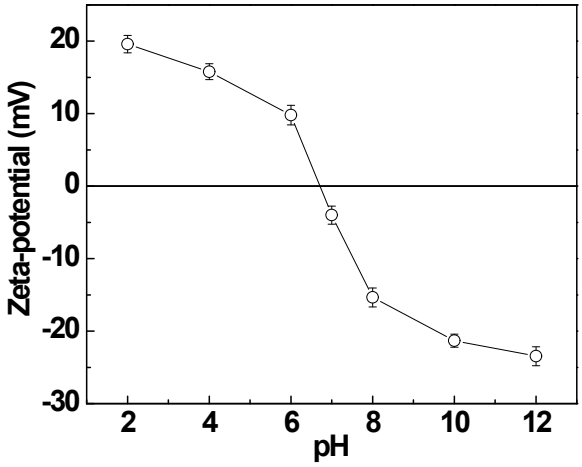

Fig. S7. pH dependent zeta-potential plot of bare Fe_3O_4 nanoparticles.

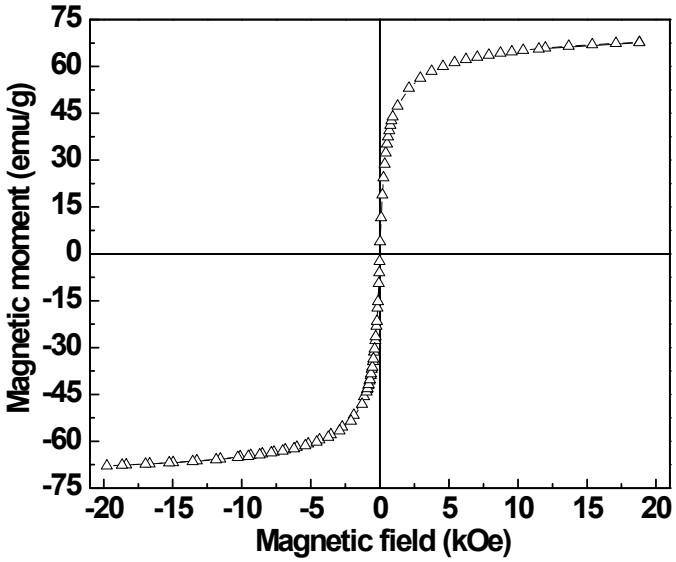

Fig. S8. Field dependent magnetization plot of bare MNP at 300 K.

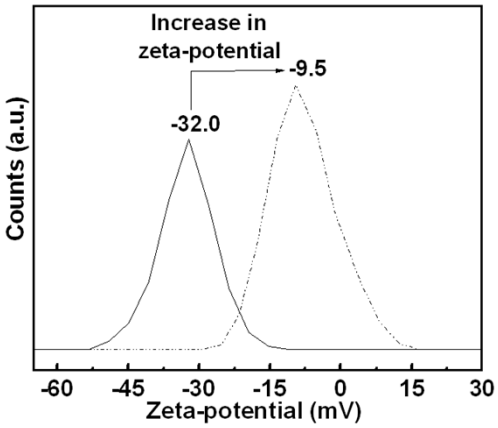

Fig. S9. Zeta-potential of 1 ml of PPNM (100 μg) and DOX-PPNM (100 μg PPNM interacting with 10 μg of DOX) suspensions.

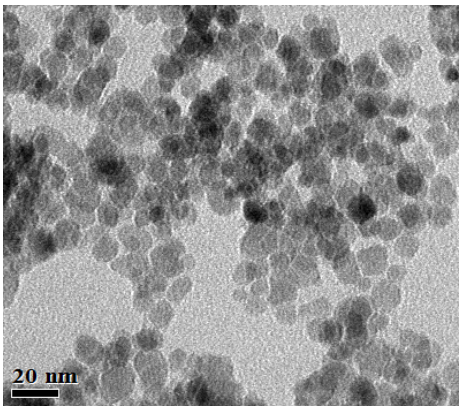

Fig. S10. TEM image of DOX loaded PPNM.

Table S1. Zeta-potential of PPNM incubated with BSA for different time.

Sample	Zeta-potential of sample in 0.01M PBS (pH 7.4)	Zeta-potential of sample incubated with BSA(0.025 mg/ml) in 1 ml of 0.01 PBS (pH 7.4)			
PPMN	-30.0	-30.2	-30.0	-29.9	-29.4