Selected scientific results

Stage 3

FePt alloy nanoparticles with $L1_0$ phase were covered with a layer of SiO_2 and TiO_2.

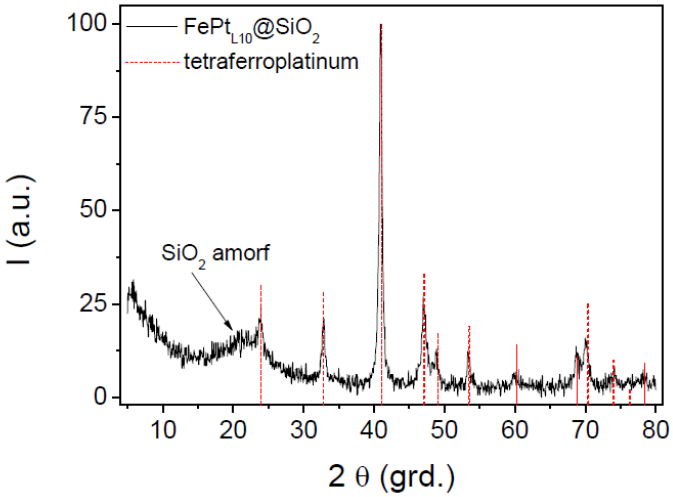

Fig.1 XRD diffractogram of $FePt_{L10}@SiO_2$ sample.

XRD diffraction pattern of sample $FePt_{L10}@SiO_2$ (Fig.1) shows the characteristic peaks corresponding to $FePt_{L10}$ (tetraferroplatinum) and also the amorphous SiO_2.

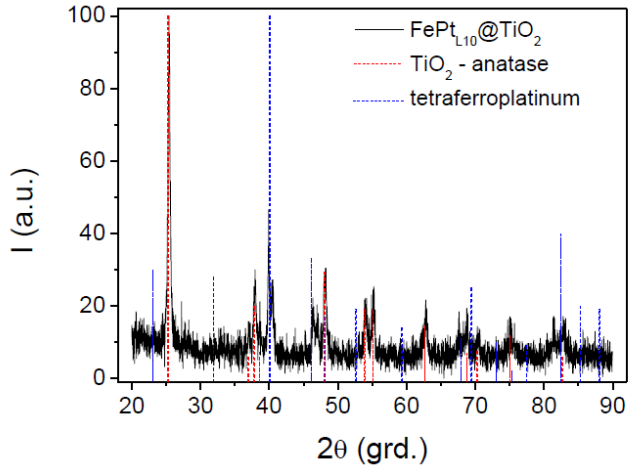

Fig.2 XRD diffractogram of $FePt_{L10}@TiO_2$ sample.

XRD diffraction pattern of sample $FePt_{L10}@SiO_2$ (Fig.2) shows the characteristic peaks corresponding to $FePt_{L10}$ (tetraferroplatinum) at 2θ=40.1 - 46.1 and also the TiO_2 with anatase phase.

Fig 3 shows the magnetization as function of applied field for $FePt_{L10}@SiO_2$ and $FePt_{L10}@TiO_2$ compared with the bare $FePt_{L10}$ samples. One can see that the coercive field of the magnetic cores is increased by SiO_2 and decreased by TiO_2 covering.

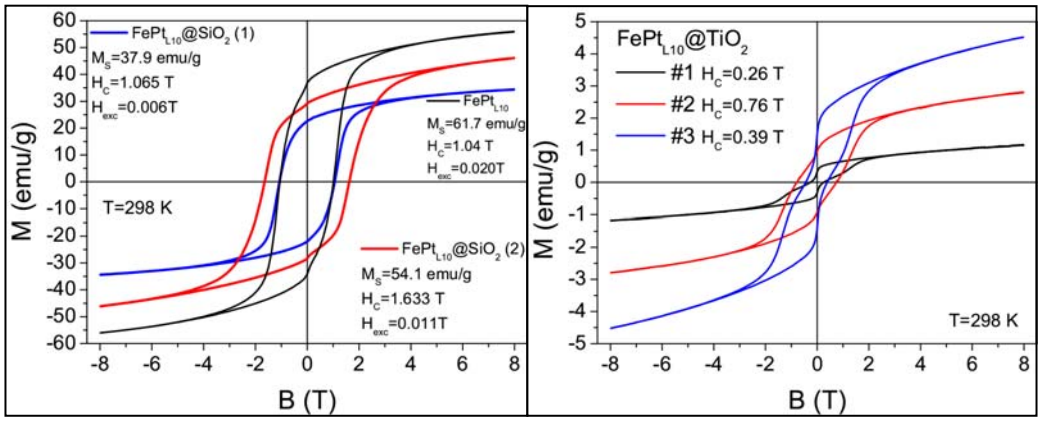

Fig.3 Magnetization as function of applied field for $FePt_{L10}@SiO_2$ and $FePt_{L10}@TiO_2$ samples compared with the bare $FePt_{L10}$.