Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Resistive switching effect and magnetic properties of iron oxide nanoparticles embedded-polyvinyl alcohol film

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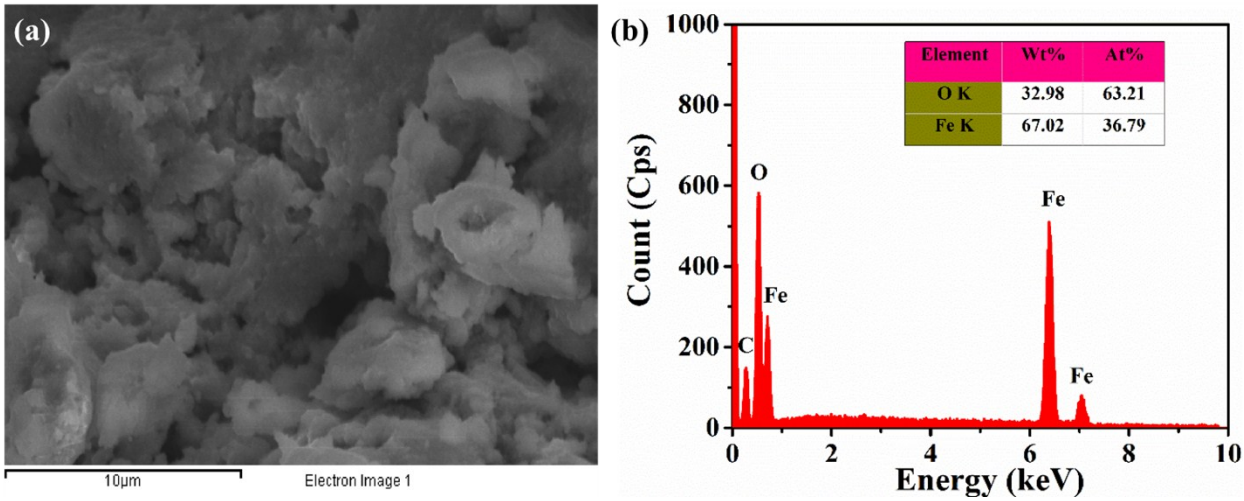

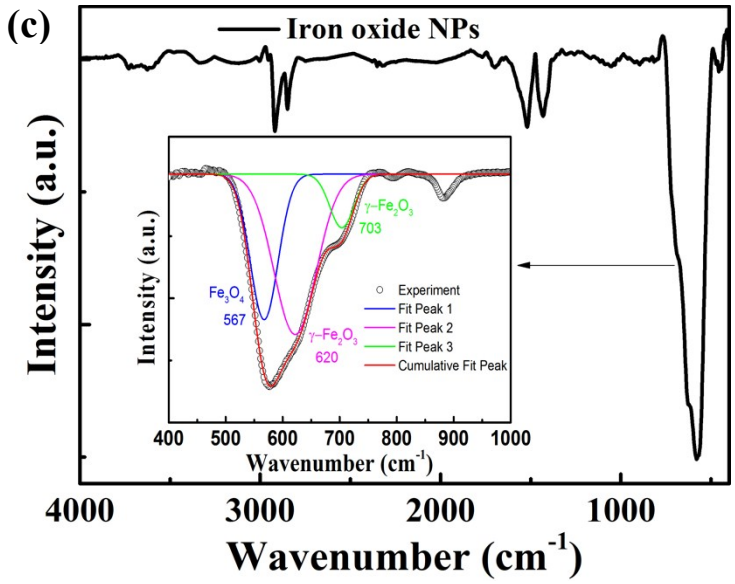

Figure S1. (a-b) EDX analysis and (c) FT-IR spectrum of iron oxide nanoparticles

The EDX result determines the element composition of iron oxide nanoparticles in which contained 63.21 at% oxygen and 36.79 at% Fe. The O/Fe atomic ratio is approximately 1.7. It indicated that nanoparticles could include iron oxide phase (Fe_3O_4, Fe_2O_3…) and oxygen absorbed on the surface.

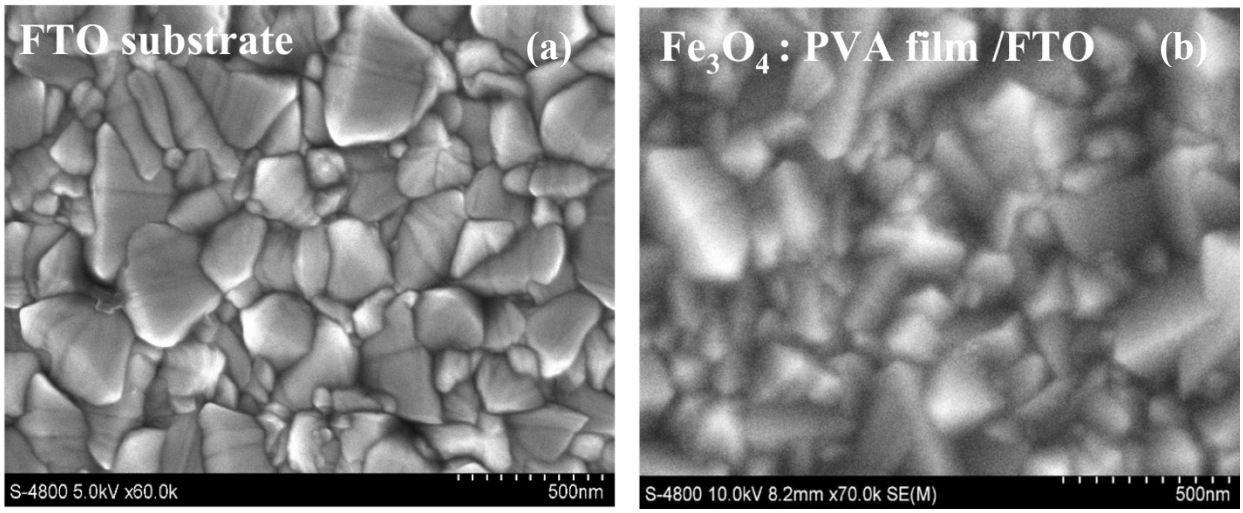

Figure S2. SEM images of surface morphology of (a) FTO substrate and (b) Fe_3O_4 : PVA thin film on FTO substrate

The surface morphology of the FTO substrate shows clearly crystalline grains and boundaries with random oriented direction (Figure S2(a)). With the Fe_3O_4 : PVA thin film covered on FTO substrate, it exhibits relative smooth and uniform coating (Figure S2 (b)). The grain boundaries of the FTO layer is not observed as sharp as in Figure S2(a).