Supporting information for review only

(1) Selected area electron diffraction (SAED) patterns of different $Zn_{0.97}Mn_{0.03}Te$ nanoparticles are shown in figure S1. Hereinto, figure S1 (d) is the inset of figure 1 in the manuscript. Although different, all the diffraction spots can be indexed to different zone axes of ZB-structured ZnTe. This indicates the single-crystalline nature of these particles, as mentioned in the manuscript. Besides the diffraction spots of ZB-structured ZnTe, no other spots related to the impurity phase like MnO can be observed in $Zn_{0.97}Mn_{0.03}Te$.

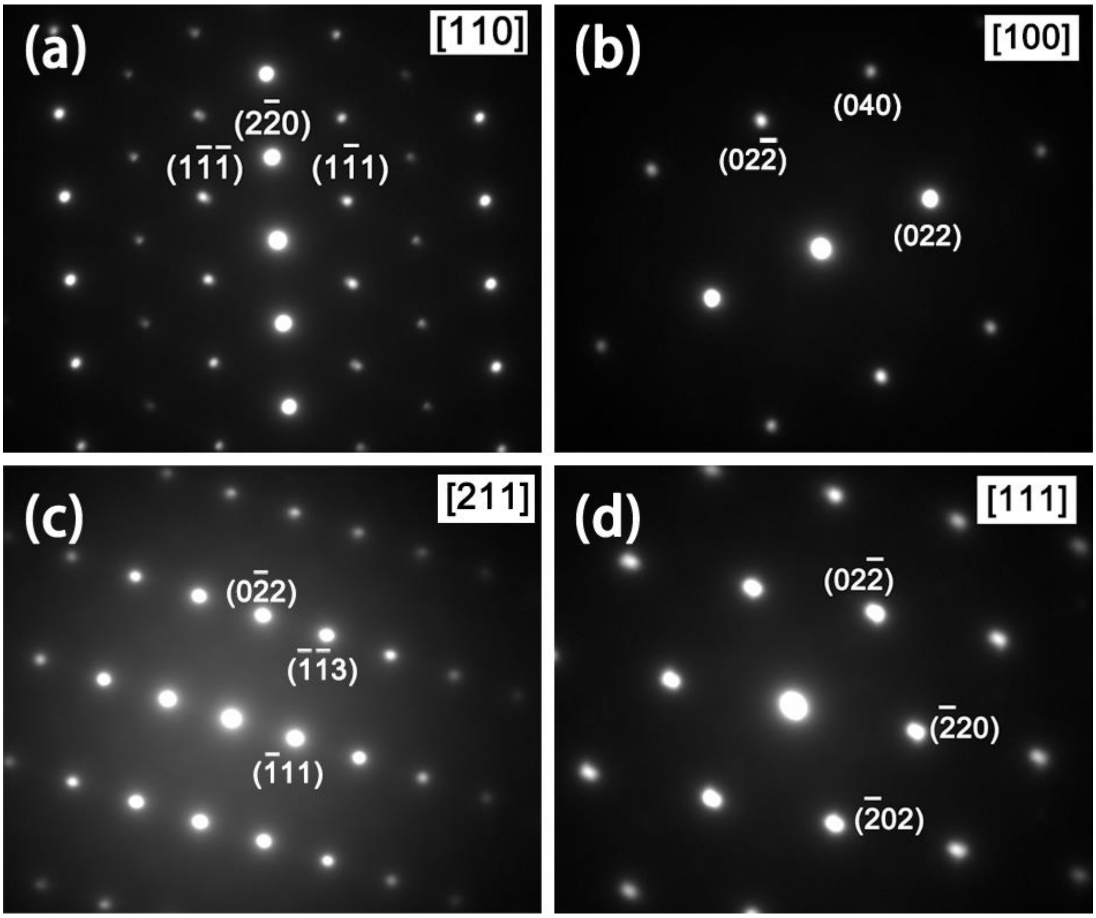

Figure S1 SAED patterns of different $Zn_{0.97}Mn_{0.03}Te$ nanoparticles.

(2) During the experiment, we also prepared a sample with the Zn:Mn:Te atomic ratio of 97:3:83 through regulating the annealing temperature. Figure S2 shows the FESEM image and the EDS spectra of this sample. Compared with $Zn_{0.97}Mn_{0.03}Te_{0.85}$

discussed in the paper, this sample has a slight decrease in the Te content. This implies a slight increase in the number of structural defects like Te vacancies which can result in the appearance of quasifree electrons of Zn ions. These electrons, combining with the holes in the p-type Mn-doped ZnTe, lead to the decrease of the hole concentration. Figure S3 shows the ZFC-FC M-T curves of this sample. Clearly, FM, SPM and PM coexist in this sample. But not like the curves of $Zn_{0.97}Mn_{0.03}Te_{0.85}$, the steps corresponding to AFM disappear for this sample. This finding indicates that carrier-mediated AFM coupling among Mn ions does not exist in this sample. It thus supports the assumption mentioned in the paper that the conductivity of ZnTe doped with 3 at.% Mn locates at the boundary between the intermediate regime and the insulating regime. A slight decrease of hole concentration may make the sample's conductivity shift from the boundary to the insulating regime. Therefore, AFM caused by the carrier-mediated interaction disappear and the BMP model can be used to explain the magnetism of this sample.

The paper reporting the magnetism of the above-mentioned $Zn_{0.97}Mn_{0.03}Te_{0.83}$ has just been accepted for publication in *Journal of Alloys and Compounds* (DOI: 10.1016/j.jallcom.2014.08.012).

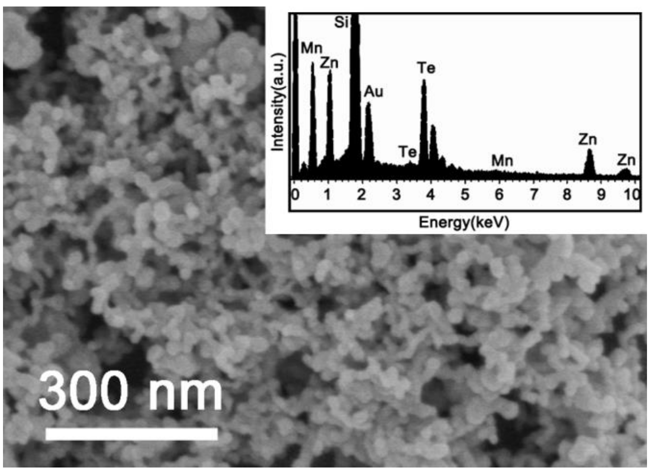

Figure S2 FESEM image and the EDS spectra of $Zn_{0.97}Mn_{0.03}Te_{0.83}$.

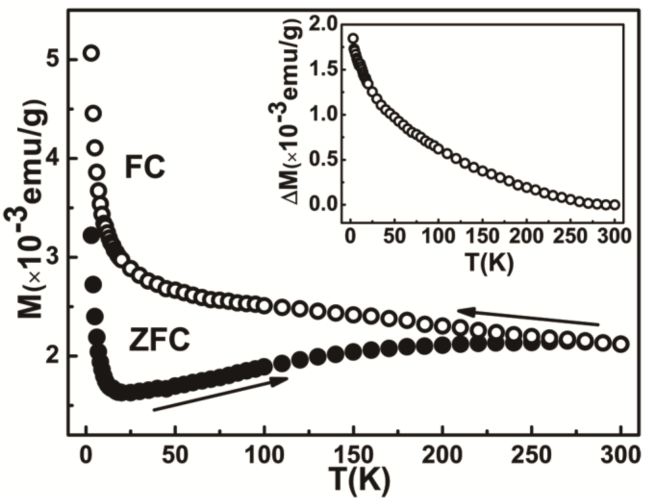

Figure S3 ZFC-FC M-T curves of $Zn_{0.97}Mn_{0.03}Te_{0.83}$ powder. The inset graph is the temperature dependence of ΔM.