Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Interplay of chemical structure and magnetic order coupling at the interface between Cr_2O_3 and Fe_3O_4 in Hybrid Nanocomposites

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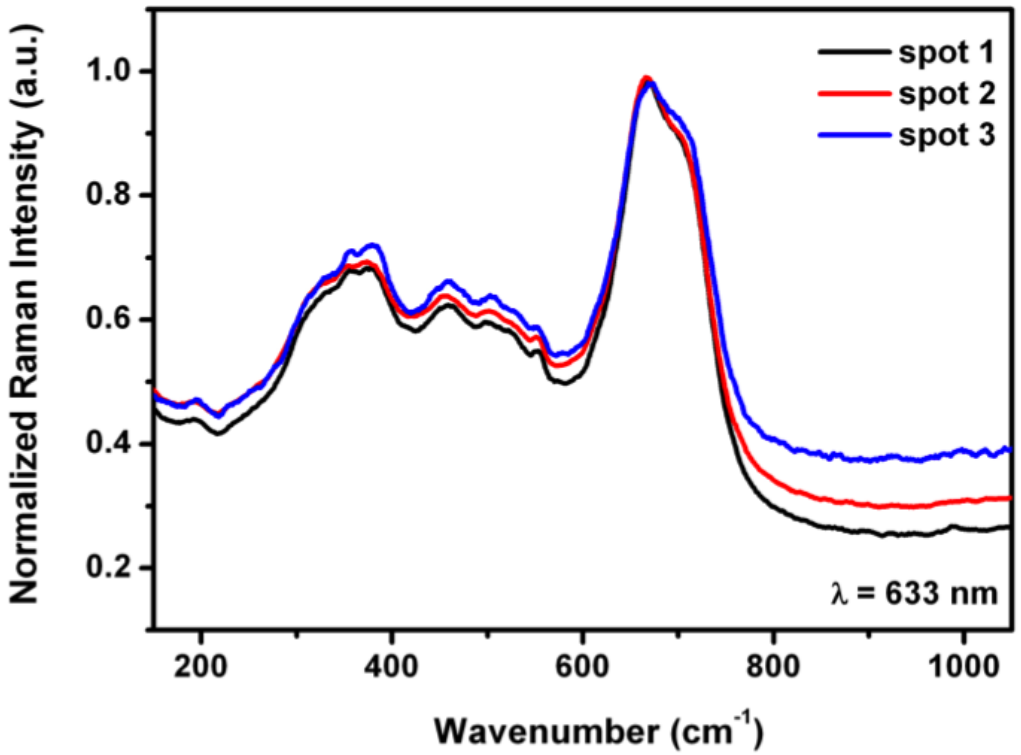

Figure S1. Raman spectra of the hybrid nanostructures as dried powder onto the sample holder, collected at room temperature and in three different spots of the sample using the 633 nm excitation wavelength.

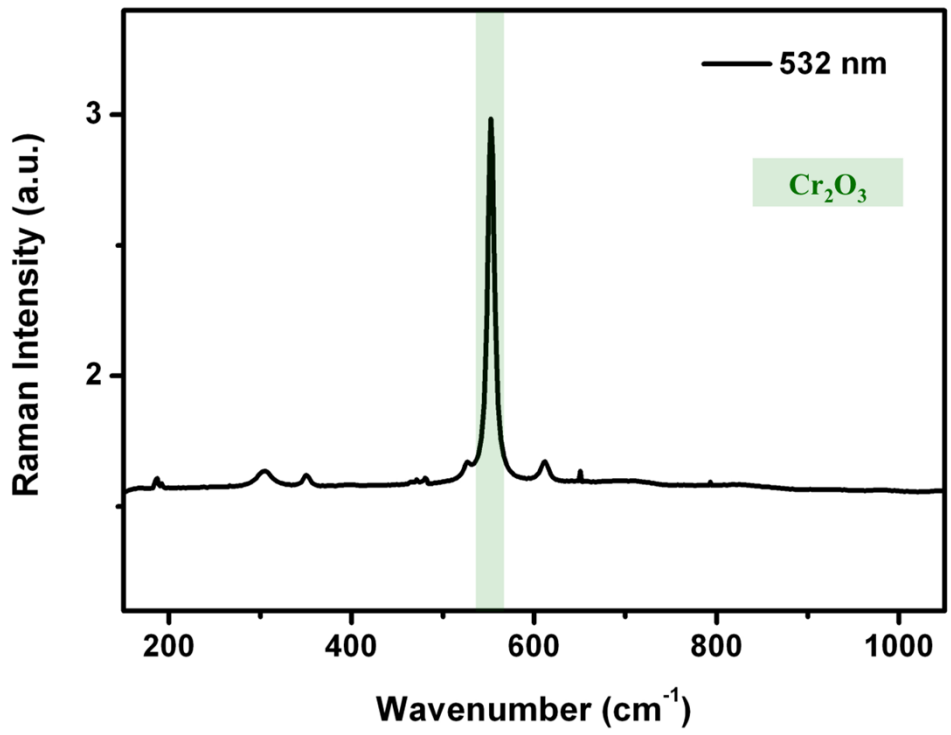

Figure S2. Raman spectrum obtained using a 532 nm excitation wavelength of the Cr_2O_3 nanoparticles previously synthesized.

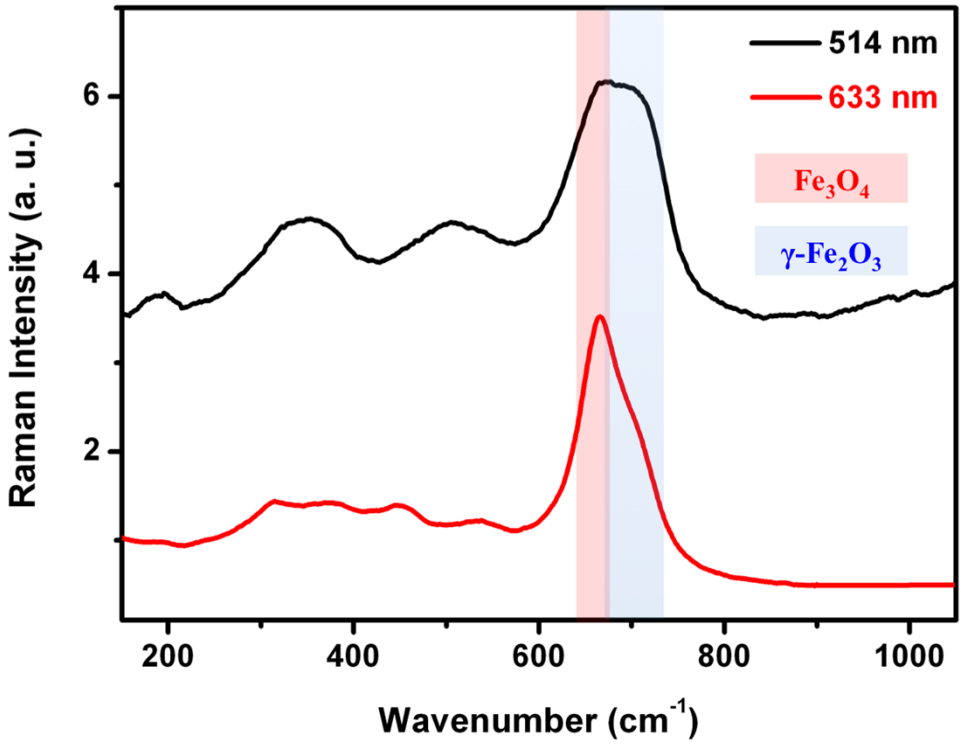

Figure S3. Raman spectra obtained using a 514 and 633 nm excitation wavelength of Fe_3O_4-based nanocomposites synthesized in the absence of Cr_2O_3 nanoparticles.

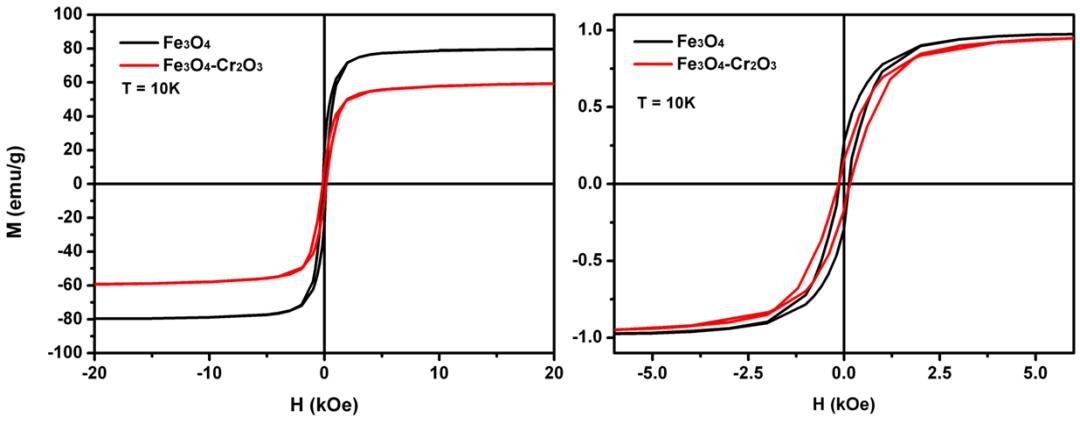

Figure S4. Hysteresis loops of two samples of magnetite nanocomposites (normalized on the graph on the right), synthesized in the absence and presence of Cr_2O_3 nanoparticles.

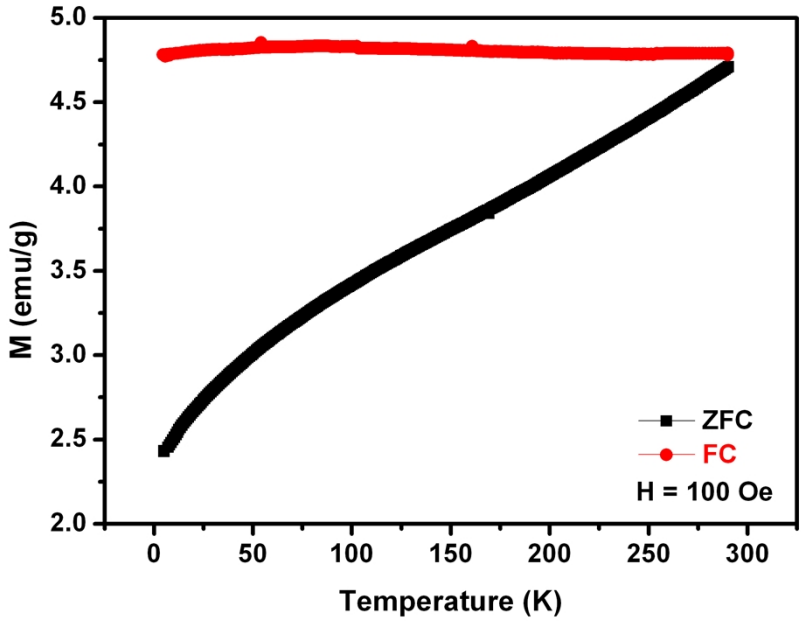

Figure S5. Temperature dependent magnetization curves (in ZFC-FC conditions) of the hybrid nanocomposites.