Supporting information

Journal of Materials Science: Materials in Electronics (JMSE)

Raman spectroscopy in pure and doped zinc ferrites nanoparticles

B. Albini[1)], S. Restelli[1)], M. Ambrosetti[2)], M. Bini[2)], F. D'Amico[3)], M.C. Mozzati[1)], P. Galinetto[1)]

1) Dept. of Physics and CNISM, University of Pavia, via Bassi 6, 27100 Pavia, Italy

2) Dept. of Chemistry, University of Pavia, viale Taramelli 16, 27100 Pavia Italy

3) Elettra-Sincrotrone Trieste S. C. p. A., Science Park, 34149 Trieste, Italy

E-mail (corresponding author)[*]: benedetta.albini@unipv.it

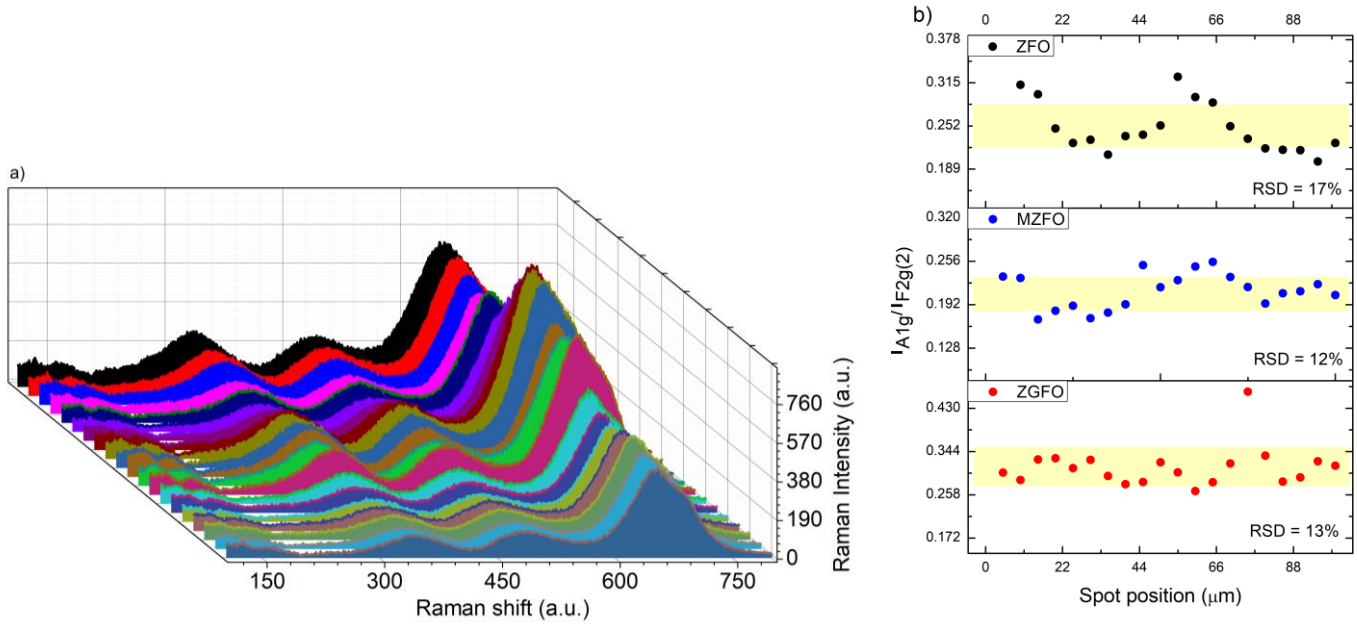

Fig.S1 a) Raman spectra of the pure sample recorded along a single linear scan of 100 μm: b) Ratio between the intensities of the A_{1g} and $F_{2g}(2)$ modes, reported as a function of the laser spot position for all the investigated samples

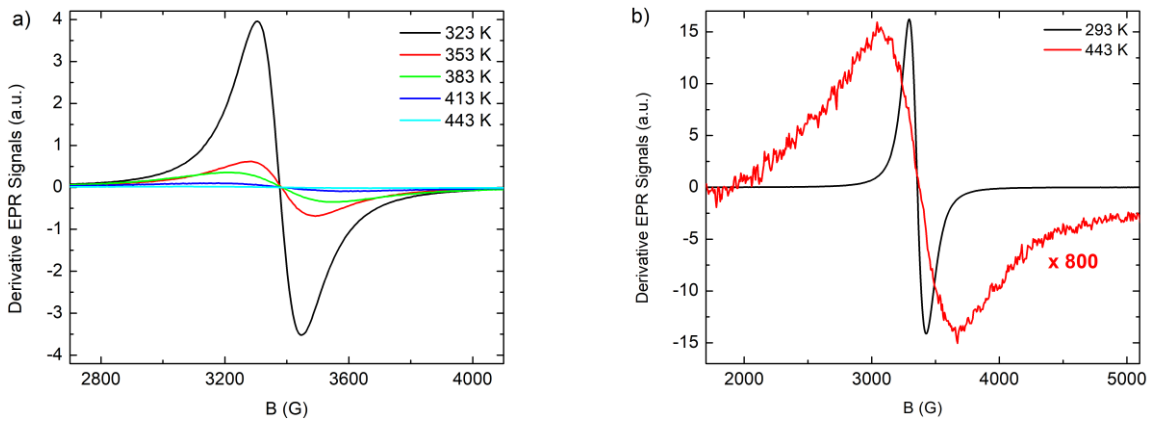

Fig.S2 a) Derivative EPR signals collected above room temperature for the MZFO sample; b) comparison between the EPR signals of the same sample collected at room temperature and at T = 443 K

Table S1 – The main structural parameters obtained from Rietveld refinements, together with the agreement indices R_{wp} and GoF.

	a/Å	Cry size/nm	R_{wp}/GoF
ZFO	8.4472(14)	6.2(1)	8.03/1.11
MZFO	8.4349(13)	7.2(1)	7.63/1.06
ZGFO	8.4387(13)	6.3(1)	7.78/1.09

The main structural parameters reported in Tab. S1 show that the doping slightly affected the XRPD patterns. Indeed, the lattice parameters are similar, even if slightly lower for the doped samples with respect to ZFO. This can be due to the differences in the ionic radii of Zn^{2+} (0.6 Å) and Mg^{2+} (0.57 Å) and Fe^{3+} (0.64 Å) and Ga^{3+} (0.62 Å). The refinements are all reliable, as demonstrated by the GoF values near to 1.