

Abstract Submitted  
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**Study of the magnetic behavior of  $\text{Mn}_{1-x}\text{Zn}_x$  Ferrite nanoparticles at low temperature**<sup>1</sup> O. MARIN, D. REYES, Thin Films Group, Physics Department, Universidad del Valle, O. ALMANZA, Physics Department, Universidad Nacional de Colombia, P. PRIETO, Thin Films Group, Physics Department, Universidad del Valle, A. MENDOZA, Physics Department, Universidad Nacional de Colombia — We report on magnetic spin resonance and magnetization hysteresis loops of  $\text{Mn}_{1-x}\text{Zn}_x$  Ferrite nanoparticles with sizes ranging from 20nm to 50nm obtained via microemulsions. The samples were evaluated by VSM technique ranging from 10K<300K at ZFC and FC. EPR measurements at T=180K were carried out in the  $0 \leq x \leq 0.75$  range. Experimental results for the peak-to-peak linewidth,  $\Delta H_{pp}$ , have been discussed by the existence of monodomain ferrimagnetic particles. The results indicate an increase of  $\Delta H_{pp}$  by increasing the Zn concentration. The EPR signal shows a second EPR pick for  $x>0.5$  at  $g=4.10$  associated at local magnetic fields produced for Mn chains. The anisotropy constant was calculated by means of a genetic algorithm for parameter optimization of the Jiles-Atherton model.

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